

11729.1 contg

TTAGAGAGGCACAGAAGGAAGAAGAGTTAAAAGCAGCAAAGCCGGGTTTTTTGTTTTGT  
TTTTTTTTTTTTTTTTGAGATGGAGTCTCACTCTGTTGCCCAAGCTGGAGTACAACGGCA  
TGATCTCAGCTCGCTGCAACCTCCGCCTCCACGTTCAAGTGATTCTCCTGCCTCAGCCTCC  
CAAGTAGCTGGGATTACAGGCGCCCGCCACCACGCTCAGCTAATTTTTTTGTATTTTTAGT  
AGAGACAGGGTTTACCAGGTTGGCCAGGCTGCTCTTGAACCTCTGACCTCAGGTGATCCA  
CCCGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCGGCCCCCAA  
AGCTGTTTCTTTTGTCTTTAGCGTAAAGCTCTCCTGCCATGCAGTATCTACATAACTGACGT  
GACTGCCAGCAAGCTCAGTCACTCCGTGGTC

11729-45.21.21.cons1

TAGGATGTGTTGGACCTCTGTGTCAAAAAAACCTCACAAAGAATCCCTGCTCATTACA  
GAAGAAGATGCATTTAAATATGGGTTATTTTCACTTTTTATCTGAGGACAAGTATCCAT  
TAATTATTGTGTCAGAAGAGATTGAATACCTGCTTAAGAAGCTTACAGAAGCTATGGGAG  
GAGGTTGGCAGCAAGAACAATTTGAACATTATAAAATCACTTTGATGACAGTAAAAATG  
GCCTTTCTGCATGGGAACCTTATTGAGCTTATTGGAAATGGACAGTTAGCAAAGGCATGGA  
CCGGCAGACTGTGTCTATGGCAATTAATGAAGTCTTAAATGAACCTATATTAGATGTGTTA  
AAGCAGGGTTACATGATGAAAAAGGGCCACAGACGAAAAAACTGGACTGAAAGATGGTT  
TGTAATAAACCCAACATAATTTCTTACTATGTGAGTGAGGATCTGAAGGATAAGAAAGG  
AGACATTCTCTTGGATGAAAATTGCTGTGTAGAGTCCTTGCTGACAAAGATGGAAA

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TTAGAGAGGCACAGAAGGAAGAAGAGTTAAAAGCAGCAAAGCCGGGTTTTTTGTTTTGT  
TTTTTTTTTTTTTTTTGAGATGGAGTCTCACTCTGTTGCCCAAGCTGGAGTACAACGGCA  
TGATCTCAGCTCGCTGCAACCTCCGCCTCCACGTTCAAGTGATTCTCCTGCCTCAGCCTCC  
CAAGTAGCTGGGATTACAGGCGCCCGCCACCACGCTCAGCTAATTTTTTTGTATTTTTAGT  
AGAGACAGGGTTTACCAGGTTGGCCAGGCTGCTCTTGAACCTCTGACCTCAGGTGATCCA  
CCCGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCGGCCCCCAA  
AGCTGTTTCTTTTGTCTTTAGCGTAAAGCTCTCCTGCCATGCAGTATCTACATAACTGACGT  
GACTGCCAGCAAGCTCAGTCACTCCGTGGTC

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TCTTTTCTTTTCGATTTCTTCAATTTGTACGTTTGATTTTATGAAGTGTTCAGGGCTAA  
CTGCTGTGATTATAGCTTTCTCTGAGTTCTTCAGCTGATTGTTAAATGAATCCATTCTG  
AGAGCTTAGATGCAGTTCTTTTTCAAGAGCATCTAATTGTTCTTTAAGTCTTTGGCATAAT  
TCTTCCTTTTCTGATGACTTTTTATGAAGTAACTGATCCCTGAATCAGGTGTGTTACTGAG  
CTGCATGTTTTTAATTCTTTCTTTAATAGCTGCTTCTCAGGGACCAGATAGATAAGCTTAT  
TTTGATAATCCTTAAGCTCTTGTGAAGTTGTTTGATTCCATAATTTCCAGGTACACTGT  
TTATCCAAAACCTTAGCTCAGTCTTTTGTGTTTGCTTTCTGATTTGGACATCTTGATGCTG  
CCTGAGATCTGCTGATGXTTCCATTCACTGCTCCAGTTCAGGTGGAGACTTXXCTTTCT  
GGAGCTCAGCCTGACAAATGCCTTCTTGXTCCCT

FIG. 1A



11731.2contig

AGCCAGATGGCTGAGAGCTGCAAGAAGAAGTCAGGATCATGATGGCTCAGTTTCCCACAG  
CGATGAATGGAGGGCCAAATATGTGGGCTATTACATCTGAAGAACGTACTAAGCATGATA  
AACAGTTTGATAACCTCAAACCTTCAGGAGGTTACATAACAGGTGATCAAGCCCGTACTTT  
TTTCCTACAGTCAGGCTCTGCCGGCCCCGGTTTAACTGAAATATGGGCCTTATCAGATCTG  
AACAAAGGATGGGAAGATGGACCAGCAAGAGTTCTCTATAGCTATGAAACTCATCAAGTTA  
AAGTTGCAGGGCCAAACAGCTGCCTGTAGTCTCCCTCCTATCATGAAACAACCCCTATGT  
TCTCTCCACTAATCTCTGCTCGTTTGGGATGGGAAGCATGCCCAATCTGTCCATTTCATCAG  
CCATTGCCTCCAGTTGCACCTATAGCAACACCTTGTCTTCTGCTACTTCAGGGACCAGTAT  
TCCTCCCTAATGATGCCTGCTCCCTAGTGCCTTCTGTTAGTA

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AATAGATTTAATGCAGAGTGTCAACTTCAATTGATTGATAGTGGCTGCCTAGAGTGTGTG  
TTGAGTAGGTTTCTGAGGATGCACCCTGGCTTGAAGAGAAAGACTGGCAGGATTAACAAT  
ATCTAAAATCTCACTTGTAGGAGAAACCACAGGCACCAGAGCTGCCACTGGTGCTGGCAC  
CAGCTCCACCAAGGCCAGCGAAGAGCCCAAATGTGAGAGTGGCGGTGAGGCTGGCACCAG  
CACTGAAGCCACCCTGGTGCTGGCACTGGCACTGGCACTGTTATTGGTACTGGTACTGGC  
ACCAAGTGTGGCACTGCCACTCTCTGGGCTTTGGCTTTAGCTTCTGCTCCCGCTGGATCC  
GGGCTTTGGCCAGGGTCCGATATCAGCTTCGTCCAGTTGCAGGGCCCGGCAGCATTTCTC  
CGAGCCGAGCCCAATGCCCATTCGAGCTCTAATCTCGGCCCTAGCCTTGGCTTCAGCTGCA  
GCCTCAGCTGCAGCCTTCAAATCCGCTTCCATCGCCTCTCGGTAC

11734.2contig

GCCAAGAAAGCCCGAAAGGTGAAGCATCTGGATGGGGAAGAGGATGGCAGCAGTGATCA  
GAGTCAGGCTTCTGGAACCAAGGTGGCCGAAGGGTCTCAAAGGCCCTAATGGCCTCAAT  
GGCCCGCAGGGCTTCAAGGGGTCCCATAGCCTTTTGGGCCCGAGGGCATCAAGGACTCG  
GTTGGTGCTTGGGCCCGAGAGCCTTGCTCTCCCTGAGATCACCTAAAGCCCGTAGGGGC  
AAGGCTCGCCGTAGAGCTGCCAAGCTCCAGTCATCCCAAGAGCCTGAAGCACCACCT  
CGGGATGTGCCCTTTTGAAGGAGGGCAAATGATTGGTGAAGTACCTTTTGGCTAAAG  
ACCAGACGAAGATTCCCATCAAGCGCTCGGACATGCTGAAGGACATCATAAAGAATACA  
CTGATGTGTACCCGAAATCATTGAACGAGCAGGCTATTCCTTGGAGAAGGTATTTGGGAT  
TCAATTGAAGGAAATTGATAAGAATGACCCTGTACATTCTTCTCAGC

11736.1contg

GAGGTCTCACTATGTTGCCAGGCTGTTCTTGAACCTCTGGGATCAAGCAATCCACCCATG  
TTGGTCTCCAAAAGTGTGGGATCATAGGCGTGAGCCACCTCACCCAGCCACCAATTTTCA  
ATCAGGAAGACTTTTTCCTTCTTCAAGAAGTGAAGGGTTCCAGAGTATAGCTACACTATT  
GCTTGCCTGAGGGTGACTACAAAATTGCTTGCTAAAAGGTTAGGATGGGTAAAGAATTAG  
ATTTTCTGAATGCAAAAAATAAATGTGAACTAATGAACTTTAGGTAATACATATTCATAAA  
ATAATTATTCACATATTTCTGATTTATCACAGAAATAATGTATGAAATGCTTTGAGTTTCT  
TGGAGTAACTCCATTACTCATCCCAAGAAACCATATTATAAGTATCACTGATAATAAGAA  
CAACAGGACCTTGTATAAATTCTGGATAAGAGAAATAGTCTCTGGGTGTTTGTCTTAAT  
TGATAAAATTTACTTGTCCATCTTTAGTTCAGAATCACAAAA

FIG. 1B



CCAGCTTGTACTGATGTCGGCTGCGAGAGCCTGTGCTTAAGTAAGAATCAGGCCTTATTG

11736 2contig

AACCGGAAATGAGAAAGGAGGGGAAAATCATGTGGTATTGAGCGGAAAACCTGCTGGATGA  
CAGGGCTCAGTCCTGTTGGAGAACTCTGGGTGGTGCTGTAGAACAGGGCCACTCACAGTG  
GGGTGCACAGACCAGCACGGCTCTGTGACCTGTTGTIACAGGTCCATGATGAGGTAAAC  
AATACACTGAGTATAAGGGTTGGTTTAGAACTCTTACAGCAATTTGACAAAGTAATCITC  
TGTGCAGTGAATCTAAGAAAAAAATTTGGGGCTGTATTTGTATGTTCTTTTTTTCATTTTAT  
GTTCTGAGTTACCTATTTTTATGCAATTTTACAAAAGCATCCTTCCATGAAGGACCGGAAGT  
TAAAAACAAAGCAGGTCTTTATCACAGCACTGTCGTAGAACACAGTTCAGAGTTATCCAC  
CCAAGGAGCCAGGAGCTGGGCTAAACCAAAGAATTTGCTTTTGGTTAATCATCAGGTA  
CTTGAGTTGGAATTGTTTAATCCCATCATTACCAGGCTGGAXGTG

11739-1&2

CCGCGGCTCCTGTCCAGACCCTGACCCCTCCCTCCCAAGGCTCAACCGTCCCCCAACAACCG  
CCAGCCTTGTACTGATGTCGGCTGCGAGAGCCTGTGCTTAAGTAAGAATCAGGCCTTATTG  
GAGACATTCAAGCAAAGGTTGGACAACCTACTTTCCAGAACAGAAAGGAACTCATGCAT  
CAGAAAAGGTGACTAATAAAGGTACCAGAAGAATATGGCTGCACAAATACCAGAATCTGA  
TCAGATAAAACAGTTTAAGGAATTTCTGGGGACCTACAATAAACTTACAGAGACCTGCTTT  
TTGGACTGTGTTAGAGACTTCACAACAAGAGAAGTAAAACCTGAAGAGACCACCTGTTC  
GAACATTGCTTACAGAAATATTTAAAAATGACACAAGAATATCCATGAGATTTTCAGGAA  
TATCATATTCAGCAGAATGAAGCCCTGGCAGCCAAAGCAGGACTCCTTGGCCAACCACGA  
TAGAGAAGTCCTGATGGATGAACCTTTGATGAAAGATTGCCAACAGCTGCTTTATTGGAAA  
TGAGGACTCATCTGATAGAATCCCCTGAAAGCAGTAGCCACCATGTTCAACCATCTGTCTAT  
GACTGTTTGGCAAATGGAAACCGCTGGAGAAACAAAATTGCTATTTACCAGGAATAATCA  
CAATAGAAAGTCTTATTGTTTCAGTGAAATAATAAGATGCAACATTTGTTGAGGCCTTATGA  
TTCAGCAGCTTGGTCACTTGATTAGAAAAATAAACCATTTGTTCTTCAATTGTGACTGTTA  
ATTTTAAAGCAACTTATGTGTTTCGATCATGTATGAGATAGAAAAATTTTATTACTCAAAG  
TAAAAATAAATGGA

11740.1.contig

GAAAAAAATATAAAACACACTTTTTCGAAAAACGGTGGCCCTAAAAGAGGAAAAGAATTT  
CACCAATATAAATCCAATTTTATGAAAACCTGACAATTTAATCCAAGAATCACTTTTGTA  
TGAAGCTAGCAAGTGATGATATGATAAAATAAACCTGGAGGAAATAAAAACACAAGACTT  
GGCATAAGATATATCCACTTTTGATATTAACCTTGTGAAGCATATTCCTCGACAAATTTGTG  
AAAGCGTTCCTGATCTTGCTTGTCTCCATTTCAAATAAGGAGGCATATCACATCCCAAGA  
GTAACAGAAAAAGAAAAAGACATTTTTCATTTTGAGATGAACCAAGACACAAAAACAA  
AACGAACAAAAGTGCATGTCTAATTCTAGCCTCTGAAATAAACCTTGAACATCTCCTACAA  
GGCACCCTGATTTTGTAAATCTAACCTGAAGAAATGTGATGACTTTTGTGGACATGAAAA  
TCAGATGAGAAAACCTGTGGTCTTTCCAAAGCCTGAACTCCCCTGAAAACCTTTGCA

FIG. 1C



11766.1.contig

CTGGGATCATTTCTCTTGATGTCATAAAAGACTCTTCTCTTCTCCTCTTCATCCTCTTCTTCAT  
CCTCTTCTGTACAGTGCTGCCGGGTACAACGGCTATCTTTGTCTTTATCCTGAGATGAAGAT  
GATGCTTCTGTTTCTCCTACCATAACTGAAGAAATTCGCTGGAAGTCGTTTACTGGCTGT  
TTCTCTGACTTCACCTTCCTTTGTCAAACCTGAGTCTTTTTACCTCATGCCCTCAGCTTCCAC  
AGCATCTTCATCTGGATGTTTATTTTTCAAAGGGCTCACTGAGGAAACTTCTGATTCAAG  
GTCGAAGAGTCACTGTGATTTTTCTCCTCATTTTGCTGCAAATTTGCCTCTTTGCTGTCTGT  
GCTCTCAGGCAACCCATTTGTTGTCATGGGGGCTGACAAAGAAACCTTTGGTCGATTAAGT  
GGCCTGGGTGTCCAGGCCCATTTATATTAGACCTCTCAGTATAGCTTGGTGAATTTCCAG  
GAAACATAACACCATTTCGATTAAACTATTGGAATTGGTTTT

11766.2.contig

GAGGGTTGGTGGTAGCGGCTTGGGGAGGTGCTCGCTCTGTGGTCTTGCTCTCTCGCACGC  
TTCCCCCGGCTCCCTTCGTTTCCCCCCCCCGGTGCGCTGCGTGCCGAGTGTGTGCGAGGG  
AGGGGGAGGGCGTCGGGGGGGTGGGGGAGGCGTCCGGTCCCCAAGAGACCCGCGGAG  
GGAGGGCGGAGGCTGTGAGGGACTCCGGGAAGCCATGGACGTCGAGAGGCTCCAGGAGGC  
GCTGAAAGATTTTGAGAAGAGGGGGAAAAAGGAAGTTTGTCTGTCTGGATCAGTTTCT  
TTGTATGTAGCCAAGACTGGAGAAACAATGATTCAAGTGGTCCCAATTTAAAGGCTATTTT  
ATTTCAAACCTGGAGAAAGTGATGGATGATTTCAGAACTTCAGCTCCTGAGCCAAGAGGTC  
CTCCCAACCCTAATGTCGA

11773.2.contig

AAGCAGGCGGCTCCCGCGCTCGCAGGGCCGTGCCACCTGCCCGCCCGCCCGCTCGCTCGCT  
CGCCCGCCGCGCCGCGCTGCCGACCGCCAGCATGTGCCGAGAGTGGGCTGCCCGCGCT  
GCCGXTGCCG

11775-1&2

ATCTCTGTATGCCAAATATTTAATATAAATCTTTGAAACAAGTTCAGATGAAATAAAAAT  
CAAAGTTTGAAAAACGTGAAGATTAACCTTAATTGTCAAATATTCCTCATTGCCCAAATC  
AGTATTTTTTTTATTTCTATGCAAAAGTATGCCTTCAAACCTGCTTAAATGATATATGATATG  
ATACACAAACCAGTTTTCAAATAGTAAAGCCAGTCATCTTGCAATTGTAAGAAATAGGTA  
AAAGATTATAAGACACCTTACACACACACACACACACACAGTGTGCACGCCAATGAC  
AAAAAACAATTTGGCCTCTCCTAAAAAAGAACATGAAGACCCTTAATTGCTGCCAGGAG  
GGAACACTGTGTACCCCTCCCTACAATCCAGGTAGTTTCTTTAATCCAATAGCAAATCT  
GGGCATATTTGAGAGGAGTGATTCTGACAGCCACGTTGAAATCCTGTGGGGAACCATTCAT  
GTCCACCCACTGGTGCCTGAAAAATGCCAATAATTTTTGCTCCCACTTCTGTCTGTGTC  
TCTTCCACATCCTCACAATAGACCCAGACCCGCTGGCCCTGGCTGGGCATCGCATTTGCTG  
GTAGAGCAAGTCATAGGTCTCGTCTTTGACGTCACAGAAGCGATACACCAATTGCTGTG  
CGGTCATTGTCATAACCAGAGA

FIG. 1D



11777.1&2.cons

CAGACGGGGTTTCACTATGTTGGCTAGGCTGGTCTTGAACCTCTGACTTCAGGTGATCTGC  
CTGCCCTTGGCCTCCCAAAGTGCTGGGATTACAGGCATAAGCCACTGCGCCCGGCTGATCTG  
ATGGTTTCATAAGGCTTTTCCCCCTTTTGCACGCACTTCTCTCTGCGCCCATGTGAAG  
AAGGACATGTTTGTCTCCCTTCCACCACGATTGTAAGTTGTTTCTGAGGCCCTCCCGGCC  
ATGCTGAACCTGTGAGTCAATTAACCTCTTCTCTTATAAATTATCCAGTTTGGGTATGTC  
TTTATTAGTAGAATGAGAACAGACTAATAACAACCTTAAAGGAGACTGACGGAGAGGATT  
CTTCCTGGATCCCAGCACTTCTCTGAATGCTACTGACATTCTTCTTGAGGACTTTAACTG  
GGAGATAGAAAACAGATTCCATGGCTCAGCAGCCTGAGAGCAGGGAGGGAGCCAAGCTA  
TAGATGACATGGGCAGCCTCCCTGAGGCCAGGTGTGGCCGAACCTGGGCAGTGTGCTGCAC  
CCACCCACCAGGGCCAAGTCTGTCTTGGAGAGCCAAGCCTCAATCACTGTAGCCTCA  
AGTGTCCCCAAGCCACAGTGGCTAGGGGGACTCAGGGAACAGTTCCAGTCTGCCTACTT  
CTCTTACCTTTACCCCTCATACCTCCAAAGTAGACCATGTTTCATGAGGTCCAAAGG

11779.2.contig

AAGCGAGGAAGCCACTGCGGCTCCTGGCTGAAAAGCGGCGCCAGGCTCGGGAACAGAGG  
GAACGCGAAGAACAGGAGCGGAAGCTGCAGGCTGAAAGGGACAAGCGAATGCGAGAGG  
AGCAGCTGGCCCGGGAGGCTGAAGCCCCGGCTGAACGTGAGGCCGAGGCGCGGAGACGG  
GAGGAGCAGGAGGCTCGAGAGAAGGCGCAGGCTGAGCAGGAGGAGCAGGAGCGACTGCA  
GAAGCAGAAAGAGGAAGCCGAAGCCCGTCCCGGGAAGAAGCTGAGCGCCAGCGCCAGG  
AGCGGGAAGAGCACTTTTCAAGAGGAGGAACAGGAGAGACAAGAGCGAAGAAAGCGGCTG  
GAGGAGATAATGAAGAGGACTCGGAAATCAGAAGCCCGCGAAACCAAGAAGCAGGATGC  
AAAGGAGACCGCAGCTAACAAATCCCGCCAGACCCTTGTGAAAGCTGTAGAGACTCGGC  
CCTCTGGGCTTCCAGAAAGGATTCTATTGCAGAAAGGAAGGAGCTXGGCCCCCAXGGA

11781 & 37.cons

CTCTGTGAAAACTGATGAGGAATGAATTTACCATTACCCATGTTCTCATCCCCAAGCAAA  
GTGCTGGGTCTGATTACTGCAACACAGAGAACGAAGAAGAACTTTCTCTATACAGGATC  
AGCAGGGCCTCATCACTGGGCTGGATTCTACTCACCCACACAGACCGGTTTCTCTC  
CAGTGTGACCTACCACTCACTGCTTACCAGATGATGTTGCCAGAGTCAGTAGCCATT  
GTTTGCTCCCCCAAGTTCCAGGAACTGGATTCTTTAAACTAACTGACCATGGACTAGAGG  
AGATTTCTTCTGTGCGCCAGAAAGGATTTTCATCCACACAGCAAGGATCCACCTCTGTTCTG  
TAGCTGCAGCCACGTGACTGTTGTGGACAGAGCAGTGACCATCACAGACCTTCGATGAGC  
GTTTGAGTCCAACACCTTCCAAGAACAAACAAACCATATCAGTGTACTGTAGCCCCTTAAT  
TTAAGCTTTCTAGAAAGCTTTGGAAGTTTTTGTAGATAGTAGAAAGGGGGCATCACXTGA  
GAAAGAGCTGATTTTGTATTTTCAAGTTTGAAAAGAAATAACTGAACATATTTTATAGCAA  
GTCAGAAAGAGAACATGGTCACCCAAAAGCAACTGTAACCTCAGAAATTAAGTTACTCAGA  
AATTAAGTAGCTCAGAAATTAAGAAAGAAATGGTATAATGAACCCCCATATACCTTCTCTC  
TGGATTACCAATTGTAAACATTTTTTCTCTCAGCTATCCTTCTAATTTCTCTCTAATTTT  
AATTTGTTTATATTTACCTCTGGGCTCAATAAGGGCATCTGTGCAGAAATTTGGAAGCCAT  
TTAGAAAATCTTTGGATTTTCTGTGGTTTATGGCAATATGAATGGAGCTTATTACTGGG  
GTGAGGGACAGCTTACTCCATTGACCAGATTGTTTGGCTAACACATCCCGAAGAATGATT  
TTGTCAGGAATTATTGTTATTTAATAAATATTTTCAAGGATATTTTCTCTACAATAAAGTAA  
CAAT

FIG. 1E



11781-76-87-37

CTCTGTGGAAAACCTGATGAGGAATGAATTTACCATTACCCATGTTTCTCATCCCCAAGCAAA  
GTGCTGGGTCTGATTACTGCAACACAGAGAACGAAGAAGAACTTTTCTCATACAGGATC  
AGCAGGGCCTCATCACTGGGCTGGATTCTACTACCCACACAGACCGGTTTCTCTC  
CAGTGTGACCTACACACTCACTGCTTTACCAGATGATGTTGCCAGAGTCAGTAGCCATT  
GTTTGCTCCCCAAGTTCCAGGAACTGGATTCTTTAACTAACTGACCATGGACTAGAGG  
AGATTTCTTCTGTGCGCCAGAAAGGATTTTCACACAGCAAGGATCCACCTCTGTTCTG  
TAGCTGCAGCCACGTGACTGTTGTGGACAGAGCAGTGACCATCAGACCTTCGATGAGC  
GTTTGAGTCCAACACCTTCCAAGAACAACAAAACCATATCAGTGTACTGTAGCCCTTAAT  
TTAAGCTTTCTAGAAAGCTTTGGAAGTTTTGTAGATAGTAGAAAGGGGGGCATCACCTGA  
GAAAGAGCTGATTTGTATTTAGGTTTGAAGAAATAACTGAACATATTTTATAGGCAA  
GTCAGAAAGAGAACATGGTCACCCAAAAGCAACTGTAACCTAGAAATTAAGTTACTCAGA  
AATTAAGTAGCTCAGAAATTAAGAAAGAATGGTATAATGAACCCCATATACCTTCTCTC  
TGGATTACCAATTGTTAACATTTTTCTCTCAGCTATCCTTCTAATTTCTCTCTAATTTT  
AATTTGTTTATTTACCTCTGGGCTCAATAAGGGCATCTGTGCAGAAATTTGGAAGCCAT  
TTAGAAAATCTTTGGATTTTCTGTGGTTTATGGCAATATGAATGGAGCTTATTACTGGG  
GTGAGGGACAGCTTACTCCATTTGACCAGATTGTTGGCTAACACATCCCGAAGAATGATT  
TTGTCAGGAATTATGTTATTTAATAAATATTTAGGATATTTTCTCTACAATAAAGTAA  
CAATTA

11784-1 & 2

GGACGACAAGGCCATGGCGATATCGGATCCGAATTCAAGCCTTTGGAATTAAATAAACCT  
GGAACAGGGAAGGTGAAAGTTGGAGTGAGATGTCTTCCATATCTATACCTTTGTGCACAGT  
TGAATGGGAACTGTTTGGGTTTAGGGCATCTTAGAGTTGATGATGGAAAAAGCAGACAG  
GAACTGGTGGGAGGTCAAGTGGGGAAGTTGGTGAATGTGGAATAACTTACCTTTGTGCTC  
CACTTAAACCAGATGTGTTGCAGCTTTCTTGACATGCAAGGATCTACTTTAATCCCACT  
CTCATTAATAAATTGAATAAAAGGGAATGTTTGGCACCTGATATAATCTGCCAGGCTATG  
TGACAGTAGGAAGGAATGGTTTCCCTAACAAAGCCCAATGCACTGGTCTGACTTTATAAAT  
TATTTAATAAAATGAATATTATC

11785.2.contig

GGCAGTGACATTACCATCATGGGAACCACTTCCCTTTTCTTCAGGATTCTCTGTAGTGG  
AAGAGAGCACCCAGTGTGGGCTGAAAACATCTGAAAGTAGGGAGAAGAACCTAAAATA  
ATCAGTATCTCAGAGGGCTCTAAGGTGCCAAGAAGTCTCACTGGACATTTAAGTGCCAAC  
AAAGGCATACTTTCCGAATCGCCAAGTCAAACTTTCTAAGTTCTGTCTCTCAGAGACA  
AGTGAGACTCAAGAGTCTACTGCTTTAGTGGCACTACAGAAAACCTGGTGTACCCAGAA  
AAACAGGAGCAATTAGAAATGGTTCCAATATTTCAAAGCTCCGCAACAGGATGTGCTTT  
CCTTTGCCCATTTAGGGTTTCTTCTTCTTCTTCTTTATTAACCACT

FIG. 1F



11718-1&2 cons

TGCGCTGAAAACAACGGCCTCCTTTACTGTTAAATGCAGCCACAGGTGCTTAGCCGTGGG  
CATCTCAACCACCAGCCTCTGTGGGGGGCAGGTGGGCGTCCCTGTGGGCCTCTGGGCCCAC  
GTCCAGCCTCTGTCTCTGCCTTCCGTTCCTCGACAGTGTCCCGGCATCCCTGGTCACTTG  
GTACTTGGCGTGGGCCTCCTGTGCTGCTCCAGCAGCTCCTCCAGGXGGTCGGCCCGCTCA  
CCGACGCTCATGTTGTGTCCGGAGGCTGCTCACGGCCTCCTCCTTCGCGAGGGCTGT  
CTTCACCTCCGGXGCACCTCCTCCAGCTCCAGCTGCTGGCGGGCCTGCAGCGTGGCCAGC  
TCGGCCTTGGCCTGCCGCGTCTCCTCCARAGGCTGCCAGCCGGTCTCGAACTCCTGGC  
GGATCACCTGGGCCAGGTTGCTGCGCTCGCTAGAAAGCTGCTCGTTACCGCCTGCGCATC  
CTCCAGCGCCCGCTCCTTCTGCCGCACAAGGCCCTGCAGACGCAGATTCTCGCCCTCGGCcT  
CCCCAAGCTGGCCCTTCAAGCTCCGAGCACCGCTCCTGAAGCTTCCGCTCCGACTGCTCCAG  
CTCGGAGAGCTCGGCCTCGTACTTGTCCCGTAAGCGCTTGATGCGCTCTCGGCAGCCTTC  
TCACTCTCCTCCTTGGCCAGCGCCATGTGCGCCTCCAGCCGGTGAATGACCAGCTCAATCT  
CCTTGTCCCGCCTTTCGGATTCTTCCCTCAGCTCCTGTTCCCGGTTACGACGCCACGCC  
TCCTCCTTCTGGTGCGGCCGGCCTCCACGCCTGCCTCTCCAGCTCCAGCTGCTGCTTCAG  
GGTATTAGCTCCATCTGGCGGGCCTGCAGCGTGGCCA

13690.4

CAACTTATTACTTGAAATTATAATATAGCCTGTCCGTTTGCTGTTTCCAGGCTGTGATATAT  
TTTCCTAGTGGTTTGACTTTAAAAATAAATAAGGTTTAATTTTCTCCCC

13693.1

TGCAAGTCACGGGAGTTTATTTATTTAATTTTTTCCCCAGATGGAGACTCTGTGCCCCAGG  
CTGGAGTGCAATGGTGTGATCTTGGCTCACTGCAACCTCCACCTCCTGGGTCAAGCGATT  
CTCCTGCCACAGCCTCCCGAGTAGCTGGGATTACAGGTGCCCGCCACCACCCAGCTAAT  
TTTTATATTTTAGTAAAGACAGGGTTTCCCCATGTTGGCCAGGCTGGTCTTGAACCTCTGA  
CCTCAGGTGATCCACCTGCCTCGGCCTCCCAAAGTGTGGGATTACAGGCGTGAGCTACCC  
GTGCTGGCCAGCCACTGGAGTTTAAAGGACAGTCATGTTGGCTCCAGCCTAAGGCGGCA  
TTTTCCCCCATCAGAAAGCCCGCGGCTCCTGTACCTCAAAATAGGGCACCTGTAAAGTCAG  
TCAGTGAAGTCTCTGCTCTAACTGCCACCCGGGGCCATTGGCNTCTGACACAGCCTTGCC  
AGGANGCCTGCATCTGCAAAAGAAAAGTTCACTTCCTTTCCG

13694.1

CAGAGAATCTKAGAAAGATGTCGCGTTTTCTTTAATGAATGAGAGAAGCCCATTTGTATC  
CCTGAATCATTGAGAAAAGGCGGCGGTGGCGACAGCGCGACCTAGGGATCGATCTGGAG  
GGAAGTGGGGAGCGTGACAGACCTCTAGCTCGAGCGCGAGGGACCTCCCGCCGGGATGC  
CTGGGGAGCAGATGGACCCTACTGGAAGTCAGTTGGATTAGATTCTCTCAGCAAGATAC  
TCCTTGCTGATAATTGAAGATTCTCAGCCTGAAAGCCAGGTTCTAGAGGATGATTCTGGT  
TCTCACTTCAGTATGCTATCTCGACACCTTCTAATCTCCAGACGCACAAAGAAAATCCTG  
TGTTGGATGTTGNGTCCAATCCTTGAACAAACAGCTGGAGAAGAACGAGGAGACCGGTAA  
TAGTGGGTTCAATGAACATTTGAAAGAAAACCAGGTTGCAGACCCTG

FIG. 1G



13694.2

GA CTGTCTGAACAAGGGACCTCTGACCAGAGAGCTGCAGGAGATGCAGAGTGGTGGCAG  
GAGTGGAAAGCCAAAGAACACCCACCTTCCTCCCTTGAAGGAGTAGAGCAACCATCAGAAG  
ATACTGTTTTATTGCTCTGGTCAAACAAGTCTTCCTGAGTTGACAAAACCTCAGGCTCTGGT  
GACTTCTGAATCTGCAGTCCACTTTCCTTAAAGTTCTTGTGCAGACAACTGTTCTTTGCTTC  
CATAGCAGCAACAGATGCTTTGGGGCTAAAAGGCATGTCTCTGACCTTGCAGGTGGTGG  
ATTTTGTCTTTTACAACATGTACATCCTTACTGGGCTGTGCTGTCACAGGGATGTCCTTGC  
TGGACTGTTCTGCTATGGGGATATCTTCGTTGGACTGTTCTTCATGCTTAATTGCAGTATTA  
GCATCCACATCAGACAGCCTGGTATAACCAGAGTTGGTGGTACTGATTGTAGCTGCTCTT  
TGCCACTTCATATGGCACAAGTATTTCTCAACATCCTGGCTCTGGGAAG

13695.1

GAAATGTATATTTAATCATTCTCTTGAACGATCAGAACTCTRAAATCAGTTTTCTATAACAR  
CATGTAATACAGTACCGTGGCTCCAAGGTCCAGGAAGGCAGTGGTTAACACATGAAGAG  
TGTGGGAAGGGGGCTGGAAACAAAGTATTTCTTCAAAGCTTCATTCTCAAGGCCT  
CAATTCAGCAGTCATTGTCCTTGCTTTCAAAAGTCTGTGTGTGCTTCATGGAAGGTATAT  
GTTTGTGGCTTAATTTGAATTGTGGCCAGGAAGGGTCTGGAGATCTAAATTCAGAGTAAG  
AAAACCTGAGCTAGAAGTCAAGGCATTTCTCTTACAGAAGTTCGCTTGCAGGGTAGAATGA  
ANGGAAAGAACTTAGAAGCTCAACAAGCTGAAGATAATCCCATCAGGCATTTCCCATAG  
GCCTTGCAACTCTGTTCACTGAGAGATGTTATCCTG

13695.2

AGTCTGGAGTGAGCAAACAAGAGCAAGAAACAARRAGAAGCCAAAAGCAGAAGGCTCCA  
ATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGT  
GAAC TAGACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCC  
AGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG  
TTCTTTGTCTCTGAATTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAA  
AGTCTATCCCAACATATCCACATCTTATATCCACAAATTAAGCTGTAGTATGTACCCTAA  
GACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCA  
AATGATTCATTTTTATGATGCTTCCCAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATG  
CCCAAGTTGAGAAAAATGATCATAATTTAGCATAAACCGAGCAATCGGCGACCCC

13697.1

TAGCTGTCTTCCTCACTCTTATGGCAATGACCCCATATCTTAATGGATTAAGATAATGAAA  
GTGTATTTCTTACACTCTGTATCTATCACCAGAAGCTGAGGTGATAGCCCGCTTGTCATTGT  
CATCCATATTCTGGGACTCAGGCGGGAACCTTCTGGAATATTGCCAGGGAGCATGGCAGA  
GGGGCACAGTGCATTCTGGGGGAATGCACATTGGCTCAGCCTGGGTAATGAGTGATATAC  
ATTACCTCTGTTCAAACTCATTGCCAGCACCAGTCACAAGGCCCCACCAAATACCAGAG  
CCCAAGAAATGTAGTCTGTTGATATGGTTTTGCTGTGTCCCAACCCAAATCTCATCTTGA  
ATTGTAAGCTCCCATAAATCCCATGTGTTGTGGGAGGGACCTGGTG

FIG. 1H



13697.2

ATCATGAGGATGTTACCAAAGGGATGGTACTAAACCATTTGTATTGCTCTGTTTTACACT  
GCTITGAAGATACTACCTGAGACTGGGTAATTTATAAACAAAAGAGATTTAATTGACTCAC  
AGTTCTGTCATGGCTGAAGACGGCTCAGGAACTTACAGTCATGGTGGAAGGCAAAGGAGG  
AGCAAGGCATGTCTTACATGTCAGTAGGAGAGAGAGCGAGAGCAGGAGAACCTGCCACTT  
ATAAACCATTCAGATCTCATAACTCCCTATCATGAGAAAAACATGAGGAAACCAACCTC  
ATGATCCAATCACCTCCCGCCAGGTCCTCCCTCGACACGTGGGGATTATAATTGAGGAT  
AGAGGGACACAGAGACAAACCATATCATCATTGAGAAATCCACCCTCATAGTCCAAT  
CAGCTCCTACCAGGCCCACTCCAACACTGGGGATTGCAATTCACATGAGATTTGGATG  
GGGACACAGATTCAAACCATATCATAAC

13699.1&2

CATGGCCTTTCTCCTTAGAGGCCAGAGGTGCTGCCCTGGCTGGGAGTGAAGCTCCAGGCAC  
TACCAGCTTTCCTGATTTTCCCGTTTGGTCCATGTGAAGAGCTACCACGAGCCCCAGCCTCA  
CAGTGTCCACTCAAGGGCAGCTTGGTCTCTGTCTCAGAGGCCAGGCTGGTGTGACCT  
GGGAACCTTGACCCGGGAACAACAGGTGGCCAGAGTGAGTGTGGCTGGCCCTCAACCT  
AGTGTCCTCCTCTCTCCTGGAGCCAGTCTTGAGTTTAAAGGCATTAAAGTGTAGATA  
CAAGCTCCTTGTGGCTGGAAAAACACCCCTCTGCTGATAAAGCTCAGGGGGCACTGAGGA  
AGCAGAGGCCCTTGGGGGTGCCCTCCTGAAGAGAGCGTCAGGCCATCAGCTCTGTCCCTC  
TGGTGTCTCCACGTCTGTCTCCTCACCTCCATCTCTGGGAGCAGCTGCACCTGACTGGCCAC  
GCGGGGGCAGTGGAGGCACAGGCTCAGGTGGCCGGGTACCTGGCACCTATGGCTTAC  
AAAGTAGAGTTGGCCAGTTTCTTCCACTGAGGGGAGCACTCTGACTCCTAACAGTCTT  
CCTTGGCCTGCCATCATCTGGGGTGGCTGGCTGTCAAGAAAGGCCGGGCATGCTTTCTAAA  
CACAGCCACAGGAGGCTTGTAGGGCATCTTCCAGGTGGGGAAACAGTCTTAGATAAGTAA  
GGTGACTTGCCTAAGGCCCTCCAGCACCTTGATCTTGGAGTCTACAGCAGACTGCATGT  
SAACAACCTGGAACCGAAAAACATGCCTCAGTATAAAA

13703.3

CCAGAACCTCCTTCTCTTTGGAGAATGGGGAGGCCTCTTGGAGACACAGAGGGTTTACCT  
TGGATGACCTCTAGAGAAATTGCCCAAGAAGCCACCTTCTGGTCCCAACCTGCAGACCCC  
ACAGCAGTCAGTTGGTCAGGCCCTGTGTAGAAGGTCACTTGGCTCCATTGCCTGCTTCCA  
ACCAATGGGCAGGAGAGAAGGCCTTATTTCTCGCCACCCAATTCTCTGTACCAGCACCT  
CCGTTTTCAGTCAGYGTGTGCCAGCAACGGTACCGTTTACACAGTCA

13705.1

TGCATGTAGTTTTATTTATGTGTTTTSGTCTGAAAAACCAAGTGTCCCAGCAGCATGACTGA  
ACATCACTCACTTCCCCTACTTGATCTACAAGGCCAACGCCGAGGCCAGACCAGGATTC  
CAAACACACTGCACGAGAATATTGTGGATCCGCTGTCAGGTAAGTGTCCGTCAGTACCCA  
RACGCTGTTACGTGGCACATGACTGTACAGTGCCAGTAACAGCACTGTACTTTTCTCCCA  
TGAACAGTTACCTGCCATGTATCTACATGATTGAGAATTTTGAACAGTTAATCTGACA  
CTTGAATAATCCCATCAAAAACCGTAAATCACTTTGATGTTTGAACGACAACATAGCAT  
CACTTTACGACAGAAATCATCTGGAAAAACAGAACGAATACATACATCTTAAAAATG  
CTGGGTGGGCCAGGCACAGCTTACGCCTGTAATCCAGCACTTGGGAGGCTTAAGCG  
GGTG

FIG. 11



TGGGCGCGAAAGAAAGCCAAGGCCAAGGAGCTGGTGGCGGACGTGCAGCTGGAGGCCGAG  
GAGCAGAGGAAGCAGAAGAAGCGGCAGAGTGTGTGGGCGCTGCACAGATACCTTCACTTG  
CTGGATGGAAATGAAAATTACCGTGCTTGTGGATGCAGACGGTGAATGTAATTTCCTTCC  
CACCAATAACCAACAGTGAGAAAGACAAAGGTTAAGAAAAAGACTTCTGATTGTTTTGG  
AAGTAACAAGTGCCACCACTGCAGATTGCAAGGATGTCTAGGATGCCCTCATTCTGAA  
AATGGCAAGAAATGAAAAAGTCAAGTTAGAAAATAAAGAGGAAGGATCACTCTCAGAT  
ACTGAAGCCGATGCAGTCTCTGGACAATCCAGATCCCACAACGAATCCCAGTGTCTGGA  
AAGGACGGGCCCTTCTTCTGGTGGTGAACANGTCCCGGTGGTGGATCTTGAANGGAA  
CCTGAANGTGGTGTACCCCGTCCAAGGCCGACCTTGGCCAC

TCCGCGCTCGCAGGGCNCGTGCCACCTGCCYGTCCGCCGCTCGCTCGCTCGCCCGCCGCGCCGCGCTGCCGACCGYACATGCTGCCGAGAGTGGGCTGCCCGCGCTGCCGCTGCCGCGCCCGCGCTGCTGCCGCTGCTGCCGCTGCTGCTGCTGC

GGCGGGTAGGCATGGAAGTGAAGAAGCAAGAAGCTTTCAGACTACGTGGGGAAGAAT  
GAAAAAACCAAAATTTATCGCCAAGATTACAGCAAGGGGACAGGGAGCTCCAGCCGAGA  
GCCTATTATTAGCAGTGAGGAGCAGAAGCAGCTGATGCTGTACTATCACAGAAGACAAGA  
GGAGCTCAAGAGATTTGAAGAAATTTGATGATGACCTATTTAAACTCACCATGGGCGGA  
TAACACTGCTTTGAAAAGACATTTTCATGGAGTGAAAGATCAATAAAGTGGAGACCAAGATG  
AAGTTCAACAGCTGATGACACTTCCAAAGAGATTAGCTCACCT

TCTGAAGGTTAAATGTTTCATCTAAATAGGGATAATGRTAAACCTATAGCATAGAGTTG  
TTTGAGATTAATAGAGATAATACATGTAAATATATGTGCTGGCATACAGCAAGATTGTTG  
TTGTTGTTGATGATGATGATGATGATGATAATATTTTCTATCCCCAGTGCACAACCTGCTTG  
AACCTATTAGATAATCAATACATGTTTCTTGAACCTGAGATCAATTTCCCCATGTTGTCTGAC  
TGATGAAGCCCTACATTTTCTTCTAGAGGAGATGACATTTGAGCAAGATCTTAAAGAAAAAT  
CAGATGCCTTCAACCTGACCACCTGCTGGTGATCCCCAGGCACCTTTGTACATCTCTCCATTAG  
CTCTCATCTACCAAGCCCCATCTAATTTGATGTGCTGCCTTCTGAAGCTTGCAGCTGGCTAC  
CATCMGGTAGAATAAAAAATCATCCTTTTCATAAAATAGTGACCCCTCTTTTATTGTCATTT  
CCCAAAGCCAAGCACCGTGGGANGGTAG

**FIG. 1J**



13709.2

TATGAAGAAGGGAAAAGAAGATAATTTGTGAAAGAAATGGGTCCAGTTACTAGTCTTTGA  
AAAGGGTCAGTCTGTAGCTCTTCTTAATGAGAATAGGCAGCTTTCAGTTGCTCAGGGTCAG  
ATTTCCCTTAGTGGTGTATCTAATCACAGGAAACATCTGTGGTTCCCTCCAGTCTCTTTCTGG  
GGGACTTGGGCCCCTTCTCATTTCATTAAATTAGAGGAAATAGAACTCAAAGTACAAATTT  
ACTGTTGTTTAAACAATGCCACAAAGACATGGTTGGGAGCTATTTCTTGATTGTGTAAAT  
GCTGTTTTTGTGTGCTCATAATGGTTCAAAAATGGGTGCTGGCCAAAGAGAGATACTGT  
TACAGAAGCCAGCAAGAAGACCTCTGTTCAATTCACACCCCGGGGATATCAGGAATTGAC  
TCCAGTGTGTGCAAAATCCAGTTTGGCCTATCTTCT

13712.1&2

TGAGGGACTGATTGGTTTGCTCTCTGCTATTCAATTCCTCAAGCCCACTTGTCTGCAGCG  
TCCTCCTCTCATTCCCTTAGTTGTACCCCTCTTTCATCTGAGACCTTTCCTTCTGATGT  
CGCCTTTTCTTCTTCTGCTTTTCTGATGTTCTGCTCAGCATGTTCTGGGTGCTTCTCATCT  
GCATCATTCCCTTCAGATGCTGTAGCTTCTTCTCCTCTTCTGCTCCTTCTTCTTTCTTTT  
TTTTGGGGGGCTTGTCTCTGACTGCAGTTGAGGGGGCCCAAGGGTCTGGCCTTTGAGACG  
AGCCAGGAAGGCCTGCTCCTGGGCCTCTAGGCGAGCAAGCTTGGCCTTCATTGTGATCCCA  
AGACGGGCAGCCTTGTGTGCTGTTGCCCCCTCACAGGCTTGGAGCAGCATCTCATCAGTCA  
GAATCTTTGGGGACTTGGACCCCTGGTGTGCGTCATCACTGCAGCTCTCCAAGTCTTTGTTT  
GGCTTCTCTCCACCTGAAGTCAATGTAGCCATCTTCAAACTTCTGATACAGCAAGTTGG  
GCTTGGGATGATTATAACGGGTGGTCTCCTTAGAAAGGCTCCTTATCTGTACTCCATCCTG  
CCCAGTTTCCACTACCAAGTTGGCCGAGTCTTGTGAAGAGCTCATTCACCAGTGGTTT  
GTGAACTCCTTGGCAGGTCATGTCCTACCCCATGAGTGTCTTGCTTCAGYGTACCCCTGA  
GAGCCTGAGTGATACCAATCTCCTTCCG

13714.1&2

GACAACATGAAATAAATCCTAGAGGACAAAATTAACCTCAATAGAGTGTAGTCTAGTTAA  
AAACTCGAAAAATGAGCAAGTCTGGTGGGAGTGGAGGAAGGGCTATACTATAAATCCAAG  
TGGGCCTCCTGATCTTAACAAGCCATGCTCATTATACACATCTCTGAACTGGACATACCAC  
CTTTACGCAGGAAACAGGGCTTGGAACTTCTAAGGGAATTAACATGCACCCACATC  
TAACCTACCTGCCGGGTAGGTACCATCCCTGCTTCGCTGAAATCAGTGCTC

13716.1&2

TTGGAATTAATAAACCTGGAACAGGGAAGGTGAAAGTTGGAGTGAGATGTCTTCCATAT  
CTATACCTTTGTGCACAGTTGAATGGGAAGTGTGGGTTTAGGGCATCTTAGAGTTGATT  
GATGGAAAAAGCAGACAGGAAGTGGTGGGAGGTCAAGTGGGGAAGTTGGTGAATGTGGA  
ATAACTTACCTTTGTGCTCCACTTAAACCAGATGTGTTGCAGCTTTCCTGACATGCAAGGA  
TCTACTTTAATTCCACTCTCATTAATAAATTGAATAAAAGGGAATGTTTTGGCACCTGA  
TATAATCTGCCAGGCTATGTGACAGTAGGAAGGAATGGTTTCCCTAACAAGCCCAATGC  
ACTGGTCTGACTTTATAAATTATTAATAAAATGAACTATTATC

FIG. 1K



13718.2

AAACTGGACCTGCAACAGGGACATGAATTTACTGCARGGTCTGAGCAAGCTCAGCCCTCT  
ACCTCAGGGCCCCACAGCCATGACTACCTCCCCAGGAGCGGGAGGGTGAAGGGGGCCTG  
TCTCTGCAAGTGGAGCCAGAGTGGAGGAATGAGCTCTGAAGACACAGCACCAGCCTTCT  
CGCACCAGCCAAGCCTTAAGTGCCTGCCTGACCCTGAACCAGAACCAGCTGAAGTCCCC  
TCCAAGGGACAGGAAGGCTGGGGGAGGGAGTTTACAACCCAAGCCATTCCACCCCTCCC  
CTGCTGGGGAGAATGACACATCAAGCTGCTAACAAATTGGGGGAAGGGAAGGAAGAAAA  
CTCTGAAAAACAAATCTTGT

13722.3

CATGCGTTTACCACTGTTGGCCAGGCTGGTCTCGAACTCTGGCCTCAAGCAATCCACCC  
GCCTCAGCTCCAAAAGTGCTGGGATTACAGATGTGAGCCATGGCACCATGCCAAAAGGC  
TATATTCCTGGCTCTGTGTTTCCGAGACTGCTTTTAATCCCACTTCTCTACATTTAGATTA  
AAAAATATTTATTCATGGTCAATCTGGAACATAATTACTGCATCTTAAGTTTCCACTGAT  
GTATATAGAAGGCTAAAGGCACAATTTTATCAAATCTAGTAGAGTAACCAAACATAAAA  
TCATTAATTACTTTCACTTAATAACTAATTGACATTCCTCAAAGAGCTGTTTTCAATCCT  
GATAGGTTCTTTATTTTCAAAATATATTTGCCATGGGATGCTAATTTGCAATAAGGCGC  
ATAATGAGAATACCCCAAATGGA

13722.4

GTTGGACCCCCAGGGACTGGAAAGACACTTCTTGCCCGAGCTGTGGCGGGAGAAGCTGAT  
GTTCTTTTTATTATGCTTCTGGATCCGAATTTGATGAGATGTTTGTGGGTGTGGGAGCCAG  
CCGTATCAGAAATCTTTTAGGGAAGCAAAGGCGAATGCTCCTTGTGTTATATTTATGAT  
GAATTAGATTCTGTTGGTGGGAAGAGAATTGAATCTCCAATGCATCCATATTCAGGCAGA  
CCATAAATCAACTTCTTGCTGAAATGGATGGTTTTAAACCCAATGAAGGAGTTATCATAAT  
AGGAGCCACAACTTCCCAGAGGCATTAGATAATGCCTTAATACCGTCTGGTTCGTTTTGA  
CATGCAAGTTACAGTTCCAAGGCCAGATGTAAAGGTGCAACAGAAATTTGAAATGGTA  
TCTCAATAAAATAAAGTTTGATCAATCCCGTTGATCCAGAAATTATAGCCTCGAGGTACTG  
GTGGCTTTCCGGAAGCAGAGTTGGGAGAATCTT

13724-13698-13748

GCCTACAACATCCAGAAAGAGTCTACCCTGCACCTGGTGCTSCGTCTCAGAGGTGGGATGC  
AGATCTTCGTGAAGACCCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCGAGTGACA  
CCATYGAGAACGTCAAAGCAAAGATCCARGACAAGGAAGGCRTYCCCTGACCAGCAGA  
GGTTGATCTTTGCCGGAAGCAGCTGGAAGATGGDCGCACCCTGTCTGACTACAACATCC  
AGAAAGAGTCYACCCTGCACCTGGTGCTCCGTCTCAGAGGTGGGATGTCARATCTTCGTGA  
AGACCCTGACTGGTAAGACCATCACCTCGAGGTGGAGCCAGTGACACCATCGAGAATG  
TCAAGGCAAAGATCCAAGATAAGGAAGGCATCCCTCCTGATCAGCAGAGGTTGATCTTTG  
CTGGGAAACAGCTGGAAGATGGACGCACCCTGTCTGACTACAACATCCAGAAAGAGTCCA  
CTCTGCACTTGGTCTGCGCTTGAGGGGGGTGTCTAAGTTTCCCCTTTTAAGGTTTCMAC  
AAATTCATTGCACTTTCCTTTCAATAAAGTTGTTGCATTCCC

FIG. 1L



13730.1

GAACTGGGCCCTGAGCCCAAGTCATGCCCTGTGTCCGCATCTGCCGTGTACCTCTGTGCC  
TGCCCCCTCACCCCTCCCTCCTGGTCTTCTGAGCCAGCACCATCTCCAAATAGCCTATTCTT  
CCTGCAAATCACACACATGCGGGCCACACATACCTGCTGCCCTGGAGATGGGGAAAGTA  
GGAGAGATGAATAGAGGCCCATACATTGTACAGAAGGAGGGGCAGGTGCAGATAAAAGC  
AGCAGACCCAGCGGCAGCTGAGGTGCATGGAGCACGGTTGGGGCCGGCATTGGGCTGAGC  
ACCTGATGGGCCTCATCTCGTGAATCCTCGAGGCAGCGCCACAGCAGAGGAGTTAAGTGG  
CACCTGGGCCGAGCAGAGCAGGAGACTGAGGGTCAGAGTGGAGGCTAAGCTGCCCTGGA  
ACTCTCAATCTTGCTGCCCCCTAGTATGAAGCCCCCTCCTGCCCTACAATTCCTGA

13732.1

ATGGATCTTACTTTGCCACCCAGGTTGGAGTGCAGTGCATCTTGGCTCACTGCAGCC  
TTAACCTCCCAGGCTCAAGCTATCCTCCTGCCAAAGCCTTCCACATAGCTGGGACTACAGG  
TACACNGCCACACACCCAGCTAAAAATTTTGTATTTTGTAGAGACGGGATCTCGCCAC  
GTTGCCAGGCTGGTCCCATCCTGACCTCAAGCAGATCTGCCACCTCAGCCCCCAACGT  
GCTAGGATTACAGGCGTGAGCCACCGCACCCAGCCTTTGTTTGTCTTTAATGGAATCACC  
AGTTCCCTCCGTGTCTCAGCAGCAGCTGTGAGAAATGCTTTGCATCTGTGACCTTTATGA  
AGGGGAATTCATGCTGAATGAGGGTAGGATTACATGCTCCTGTTCCCGGGGTCAAG  
AAAGCCTCAGACTCCAGCATGATAAGCAGGGTGAG

13732.2

ATAGGGGCTTTAAGGAGGGAATTCAGGTTCAATGAGGTCGTAAGGCCAGGGCTCTTATCC  
AGTAAGACTGGGGTCCTTAGATGAGAAAGAGACACCCGAGGTCTTCTCTCTGCCCCTGTG  
AGGATGCATCAAGAAGCGGCCGTCTGCAAGCGAAGGAGAGGCCGACCAGAAACCGAC  
ACCTTCATCTTGGACTTGCAGCCTCTAGAACTGAGAAAAATACTGTCTGTTGGTTAAGCCA  
CCCAGTTTGTAGTATTCTCTTATGGCTTCCTAAGCAGACTAACAAACAAACACCCAAAATT  
AACTGATGGCTTCGCTGTCTTCTGTAATAATGCTATGAGAGAACTTTCACTCACTGTTTT  
GCAGTTTCTCCCTCAGTCCCTGGTCTTTCTTCTCACATAATCCCAATTTCAATTTATAGTTC  
ATGGCCCAGGCAGAGTCATTCATCAGGCATCTCCTGAGCTAAACCAGCACCTGTCTGCT  
CACTTCTGACTGGCTGCTCATCATCAGCCCTCTTGACAGAGATTTCATTTCTCCCGTGCCA  
GGTACTTCACGCACCAAGCTCA

FIG. 1M



13735.1

GGATAATGAAGTTGTTTTATTTAGCTTGGACAAAAAGGCATATTCCTCTATTTTCTTATACA  
ACAAATATCCCCAAAATAAAGCAAGCATATATATCTTGAATGTGTAATAATCCAGTGATA  
AACAAAGAGCAGTACTTAAAAAGAAAAAAAATATGTATTTCTGTCAGGTTAAATGAGAA  
TCAAAACCAATTTACTCTGCTAACTCATTATTTTTGCTTTCTTTTGGTAAAGAGAGGCCAAT  
GCAATACACTGAAAAAGGTTTTATCTTATCTGGCATTGGAATTAGACATATTCAAACCCC  
AGCCCCATTTCCAACTTTAAGACCACAAACAAGTAATTTACTTTTCTGAACATTGGTTTT  
TTCTGGAATGGAATTATAAAATAGACTTTGCAGACTCTTATGAGATTAAATAAGATA  
ATGTATGAAATCTTCTCTTTTTACTTCTTTTCTTTTGGAGATGGAGTCTCACCCCGT  
CACCCAGGCTGGAGTACAGTG

13735.2

CCACTGCACTCCAGCCTGGGTGACGGAGTGAGACTCTGTCTCAAAAAACAAACAAACAA  
ACAAACAAAAAAGTGAAGGAAATAGAGTTCCTCTTCTCATATATGAATATATTTATTT  
CAACAGATTGTTGATCACCTACCATATGCTTGGTATTGTTCTAATTGCTGGGGATACAGCA  
AGAGGTTCTGCAGAACTTCAATGGAGCATGAAAGTAAATAACAAAGTTAATTTCAAGGCC  
AGGCATGGTTGCTCACACCTTTAGTCCCAGCATTGGGAGGCTGAGGCAGGTGGATCACT  
TGGGCCCAGGAGTTCAAGGCTGCAGTGAGCCAAGATTGTGCCACTACTCTCCAGGCTGGG  
CAACAGAGCAAGACCCTGTCTCAGGGGAACAAAAAGTTAATTCAGATTTTGTAAAGTG  
CTGTAAAGGAAGTAAATAGGTTGATATTCAAGAGAGCACCTGAAGGCCAGGCGTGGTGGC  
TCACGCCTGTGGTCTAACGCTTTGGGAAGCCCAGCGGGCGGATCAAGGTCAGGAGAA  
TTTTGGCCAGGCATGGTG

13736.1

AGAATCCATTTATTGGGTTTTAACTAGTTACACAAGTGAATCAGTTTGGCACTACTTTA  
TACAGGGATTACGCCTGTGTATGCCGACACTTAAATACTGTACCAGGACCACTGCTGTGCT  
TAGGTCTGTATTCACTCATTACAGCATGTAGATACTAAAAATATACTGTAGTGTCTTTAA  
GGAAGACTGTACAGGGTGTGTGCAAGATGACATTCACCAATTTGTGAATTTATTTCAACCC  
AGAAGATACCTTTACTCTATAAACTTGTATAGGCAACATGTGGTGTAGCATTGAGAG  
ATGCACACAAAAATGTTACATAAAAGTTCAGACATTCTAATGATAAGTGAAGTGAACAAAA  
AAAAAACCCACATCTCAATTTTGTAAACAAGATAAAGAAAAATAATTTAAAAACACAAA  
AAATGGCATTCAAGTGGGTACAAAGCC

13737.1&2

CAAATATTTAATATAAAATCTTTGAAACAAGTTCAGAKGAAATAAAAAATCAAAGTTTGCAA  
AAACGTGAAGATTAACTTAATTGTCAAATATTCCTCATTGCCCCAAATCAGTATTTTTTTA  
TTTCTATGCAAAAGTATGCCTTCAAAGTCTTAAATGATATATGATATGATACACAAACCA  
GTTTTCAAATAGTAAAGCCAGTCATCTTGAATTTGAAGAAATAGGTAAAAGATTATAAG  
ACACCTTACACACACACACACACACACACACACGTTGTCACGCAATGACAAAAAAC  
AATTTGGCCTCTCCTAAAAATAAGAACATGAAGACCCTTAATTGCTGCCAGGAGGGAACAC  
TGTGTACCCCTCCCTACAATCCAGGTAGTTTCTTTAATCCAATAGCAAATCTGGGCATAT  
TTGAGAGGAGTGATTCTGACAGCCACSGTTGAAATCCTGTGGGGAACCATTCATGTCCACC  
CACTGGTGCCTGAAAAATGCCAATAATTTTCGCTCCCACTTCTGCTGCTGTCTCTCCA  
CATCTCACATAGACCCAGACCCGCTGGCCCTGGCTGGGCATCGCATTGCTGGTAGAGC  
AAGTCATAGGTCTCGTCTTTGACGTCACAGAAGCGATACACCAAATTGCCTGGTCTGGTCTAT  
TGTCATAACCAG

FIG. 1N



13738.1

TTTGACTTTAGTAGGGGTCTGAACTATTTATTTTACTTTGCCMGTAATTTTARACCYTATA  
TATCTTTCATTATGCCATCTTATCTTCTAATGBCAAGGGAACAGWTGCTAAMCTGGCTTCT  
GCATTWATCACATTAATAATGGCTTTCTTGAAAAATCTTCTGATATGAATAAAGGATCTT  
TTAVAGCCATCATTTAAAGCMGGNTTCTCTCCAACACGAGTCTGCTASGGGGGGKAGCT  
GTGAACTCTGGCTGAAGGCTTTCCCATACACACTGCAATGACMTGGTTTCTGACCAGBG TG  
AGTTA

13738.2

AGAGAAGCCCCATAAATGCAATCAGTGTGGGAAGGCCTTCAGTCAGAGCTCAAGCCTTTT  
CCTCCATCATCGGGTTCATACTGGAGAGAAACCCTATGTATGTAATGAATGCGGCAGAGCC  
TTTGGTTTTAACTCTCATCTTACTGAACACGTAAGGATTCACACAGGAGAAAAACCCTATG  
TTTGTAAATGAGTGGCGCAAAGCCTTTCGTCGGAGTTCCTTCTTTCAGCATCGAAGAGT  
TCACACTGGGGAGAAGCCCTACCACTGCGTGAATGTGGGAAAGCTTTCAGCCAGAGCTC  
CCAGCTCACCTACATCAGCCGAGTTCACACTGGAGAGAAGCCCTATGACTGTGGTGACTG  
TGGGAAGGCCTTCAGCCGGAGGTCAACCCCTATTTCAGCATCAGAAAGTTCACAGCGGAGA  
GACTCGTAAGTGCAGAAAACATGGTCCAGCCTTTGTTTATGGCTCCAGCCTCACAGCAGAT  
GGACAGATTCCCACTGGAGAGAAGCACGGCAGAACCTTTAACCATGGTGCAAATCTCATT  
CTGCGCTGGACAGTTC

13739.1&2

GAGACAGGGTCTCACTTTGTCAACCCAGGCTGGAATGCAGTGGTGCGATCTTACGTAGCTCA  
CTGCAGCCCTGACCTCCTGGACTCAAACAATTCTCCTGCCTCAGCCCTGCAAGTAGCTGGG  
ACTGTGGGTGCATGCCACCATGCCTGGCTAACTTTTGTAGTTTTTGTAAAGATGGGGTTTT  
GCCATGTTGCACATGCTGGTCTTGAACCTCTGAGCTCAAACGATCTGCCACCTCGGCCTC  
CCAGAATGTTGGGATTACAGGGGTAAACCACCACGCCTGGCCCCATTAGGGTATTCTTAGC  
ATCCACTTGCTCACTGAGATTAATCATAAGAGATGATAAGCACTGGAAGAAAAAATTTT  
ACTAGGCTTTGGATATTTTTCTTTTTCAGCTTTATACAGAGGATTGGATCTTTAGTTTTT  
CTTTAACTGATAATAAAACATTGAAAGGAAATAAGITTTACCTGAGATTCACAGAGATAAC  
CGGCATCACTCCCTTGTCAATTCCAGTCTTTACCACATCAATTATTTTCAGAGGTGCAGGA  
TAAAGGCCTTTAGTCTGCTTTCCGACTTTTTCTTCCACTTTTTTGTAAACCTGTTGCCTGACA  
AATGGAATTGACAGCGTATGCCATGACTATTCCAATTGTCAGGCATACGCTGTCAATTTTT  
CCACCAATCCCTTGTCTCTTTGGAGAGATCTTCTATCAGCTAGTCTTTGGCAAAAGTA  
ATTGCAACTTCTTCTAGGTATTCTATTGTCCGTTCCACTGGTGGAACCCCTGGGACCAGGA  
CTAAAACCTCCAG

13741.1

ATCTCATATATATATTTCTTCTGACTTTATTTGCTTGCTTCTGNACGCATTTAAAAATATC  
ACAGAGACCAAAATAGAGCGGCTTTCTGGTGGAACGCATGGCAGTCACAGGACAAAATAC  
AAAAGTAGGGGGCTCTGTCTTCTCATACATACATAATTTTCAAGTATTTTTTTTATGTACA  
AAGAGCTACTCTATCTGAAAAAAATTAATAAATAAATGAGACAAGATAGTTTATGCATC  
TAGGAAGAAAGAATGGGAAGAAAGAACGGGGCAGTTGGGTACAGATTCTGTCCCTGT  
TCCAGGGGACCACTACCTTCTGCCACTGAGTTCACCCACAGCCTCACCCATCATGTACA  
GGGCAAGTGCCAGGGTAGGTGGGGACCACTGGAGACAGGAACCAACATACTTTGGC  
CTGGAAGATAAGGAGAAAGTCTCAGAAACACACTGGTGGGAAGCAATCCACNGCCGT  
GCCCCANGAGCTTCCACCTGCTGCTGGCTCCCTGGGTGGCTTTGGGAACAGCTTGGGCAG  
GCCCTTTGGGTGGGNCCAACCTGGGCCTTTGGGCCCGTGTGGAAAG

FIG. 10



13742.1  
14351.1  
14351.2  
14354.2  
14354.1

13742.1

AAACATTGAGATGGAATGATAGGGTTTCCAGAATCAGGTCCATATTTTAACTAAATGAA  
AATTATGATTTATAGCCTTCTCAAATACCTGCCATCTTGATATCTCAACCAGAGCTAATTT  
TACCTCTTTACAAATTAATAAGCAAGTAACTGGATCCACAATTTATAATACCTGTCAATT  
TTTTCTGTATTAAACCTCTATCATAGTTTAAAGCCTATTAGGGTACTTAATCCTTACAAATAA  
ACAGGTTTAAATCACCTCAATAGGCAACTGCCCTTCTGGTTTTCTTCTTTGACTAAACAAT  
CTGAATGCTTAAGATTTTCCACTTTGGGTGCTAGCAGTACACAGTGTTACACTCTGTATTCC  
AGACTTCTTAAATTATAGAAAAAGGAATGTACACTTTTTGTATTCTTTCTGAGCAGGGCCG  
GGAGGCAACATCATCTACCATGGTAGGGACTTGTATGCATGGACTACTTTA

14351.1

ACTCTGTCGCCAGGCTGGAGCCABTGGMCGGATCTCGACTCCCTGCAAGCTMCGCCTC  
ACAGGWTGATGCCATTCTCGCTCAGCATCTGGAGTAGCTGGGACTACAGGCGCCAGC  
CACCATGCCCAGCTAATTTTT

14351.2

ACCTTAAAGACATAGGAGAATTTATACTGGGAGAGAAAGCTTACAAATGTAAGGTTTCTG  
ACAAGACTTGGGAGTGATTCACACCTGGAACAACATACTGGACTTCACACTGGABAGAAA  
CCTTACAAGTGTAATGAGTGTGGCAAAGCCTTTGGCAAGCAGTCAACACTTATTCACCATC  
AGGCAATTCA

14354.2

AGTCAGGATCATGATGGCTCAGTTTCCACAGCGATGAATGGAGGGCCAAATATGTGGGC  
TATTACATCTGAAGAACGTACTAAGCATGATAAACAGTTTGATAACCTCAAACCTTCAGGA  
GGTTACATAACAGGTGATCAAGCCGTACTTTTTCTACAGTCAGGTCTGCCGGCCCCGG  
TTTAGCTGAAATATGGGCCTTATCAGATCTGAACAAGGATGGGAAGATGGACCAGCAAG  
AGTTCTCTATAGCTATGAAACTCATCAAGTTAAAGTTGCAGGGCCAACAGCTGCCTGTAGT  
CCTCCCTCCTATCATGAAACAACCCCTATGTTCTCTCCACTAATCTCTGCTCGTTTGGGA  
TGGGAAGCATGCCCAATCTGTCCATTCTCAGCCATTGCCTCCAGTTGCACCTATAGCAAC  
ACCTTGTCTTCTGCTACTTCAGGGACCAGTATTCCTCCCTAATGATGCCTGCT

14354.1

CTTTCGATTTCTTCAATTTGTACGTTTGATTTTATGAAGTTGTTCAAGGGCTAACTGCTG  
TGTATTATAGCTTTCTCTGAGTTCCCTTCAGCTGATTGTTAAATGAATCCATTCTGAGAGCT  
TAGATGCAGTTTCTTTTCAAGAGCATCTAATTGTTCTTTAAGTCTTTGGCATAATTCTTCC  
TTTTCTGATGACTTTCTATGAAGTAACTGATCCCTGAATCAGGTGTGTTACTGAGCTGCAT  
GTTTTTAATTCTTTCGTTTAATAGCTGCTTCTCAGGGACCAGATAGATAAGCTTATTTTGAT  
ATTCTTAAAGCTCTTGGTGAAGTTGTTTCGATTTCATAATTTCCAGGTACACTGGTTATCC  
CAAACCTCT

**FIG. 1P**



16431.1.2

GTGGAGGTGAAACGGAGGCAAGAAAGGGGGCTACCTCAGGAGCGAGGGACAAAGGGGGC  
GTGAGGCACCTAGGCCGCGGCACCCCGGCGACAGGAAGCCGTCCTGAACCGGGCTACCGG  
GTAGGGGAAGGGCCCGGTAGTCTCTCGAGGGCCCCAGAGCTGGAGTCGGCTCCACAGCC  
CCGGGCCGTGGGCTTCTCACTTCTGGACC/CCCCGGCGCCCGGGCTGAGGACTGGCTCG  
GCGGAGGGAGAAGAGGAAACAGACTTGAGCAGCTCCCCGTTGTCTCGCAACTCCACTGCC  
GAGGAACCTCTCATTTCTTCCCTCGCTCCTTACCCCCACCTCATGTAGAAAAGGTGCTGAA  
GCGTCCGGAGGGAAGAAGAACCTGGGCTACCGTCTGGCCTTCCCMCCCCCTTCCCGGGG  
CGCTTTGGTGGGCGTGGAGTTGGGGTTGGGGGGGTGGGTGGGGGTTCTTTTTTGGAGTGCT  
GGGGAACTTTTTCCCTTCTCAGGTACAGGGGAAAGGGAATGCCCAATTCAGAGAGACAT  
GGGGGCAAGAAGGACGGGAGTGGAGGAGCTTCTGGAACTTTGCAGCCGTCATCGGGAGG  
CGGCAGCTCTAACAGCAGAGAGCGTCACCGCTTGGTATCGAAGCACAAAGCGGCATAAGTC  
CAAACACTCCAAAGACATGGGGTTGGTGACCCCGAAGCAGCATCCCTGGGCACAGTTAT  
CAAACCTTTGGTGGAGTATGATGATATCAGCTCTGATTCGACACCTTCTCCGATGACATG  
GCCTTCAAACCTAGACCGAAGGGAGAACGACGAACGTCGTGGATCAGATCGGAGCGACCGC  
CTGCACAAACATCGTCACCACACAGCAGGCGTTCCCGGGACTTACTAAAAGCTAAACAG  
ACCG

16432-1

GACATGTTTGCCTGCAGGGGACCAGAGACAATGGGATTAGCCAGTGCTCACTGTTCTTTAT  
GCTTCCAGAGAGGATGGGGACAGCTCTCAGGTACAGAATCCAGGCTGAGAAGGCCATGCTG  
GTTGGGGGCCCCCGGAAGCACGGTCCGGATCCTCCCTGGCATCAGCGTAGACCCGCTGCTC  
AGGCTTGGGGTACCAAACCTCATGCTCTGTACTGTTTGGCCCCATGCGGTGAGAGGAAAAC  
CTAGAAAAAGATTGGTCTGCTAAGGAATCAGCTGCCCCCTCATCCTCCGCATCCAATGCT  
GGTGACAACATATTCCTCTCCAGGACACAGACTCGGTGACTCCACACTGGGCTGAGTGG  
CCTCTGGAGGCTCGTGGCCTAAGGCAGGGCTCCGTAAGGCTGATCGGCTGAACCTGGGTGG  
GGTGAGGGTTTCTGACCCTTCGCTTCCCATCCCATAAACCGCTGTCAATGAGCTCACACTGT  
GGTCA

16432-2

GATGGCATGGTCGTTGCTAATGTGCCTGCTGGGATGGAGCACTTCTCCTGTGAGCCCAGG  
GGACCCGCTGTCCCTGGAGCTTGGGGCAAGGAGGGAAGAGTGATACCAGGAAGGTGGG  
GCTGCAGCCAGGGGCCAGAGTTCAGGGAGTGGTCTCGGCCCTCAAAGCTCCTCCG  
GGGACTGCTCAGGAGTGATGGTGCCCTGGAGTTGCCCCAACTTCCCTGGCCACCCTGGAA  
GGTGCCCTGGCTGCTCCAGGCCCTTAGGCTGGGCTGATGGGTTTCTCCAGGACACAAGTATC  
ATTAAGGCCACCCTCTCCTCAGCTTGTACGGCCGCACATGTGGGACAGGCTGTGCTCAAA  
CCCCCTGCCTGCCCTGCCCTCCATCAGGAGGAGCCAGTGAACCTTCGGAAAGCTCCAG  
CATCTCAGCAGCCCTCAAAGTCGTCTGGGGCAAGCTCTGGTTCTCCTGACTGGAGGTCA  
TCTGGGCTTGGCCTGCTCTCTCTCGC

17184.3

TAAAAAAGTGTAACAAAGGTTTATTTAGACTTCTTCATGCCCCAGATCCAGGATGTCTA  
TGTAACCGTTATCTTACAAAGAAAGCACAAATTTGGTATAAACTAAGTCAGTGACTTGC  
TTAACTGAAATAGCGTCCATCCAAAAGTGGGTTTAAGGTAAAACTACCTGACGATATTGGC  
GGGGATCCTGCAGTTTGGACTGCTTGCCGGGTTTGTCCAGGGTTCCGGGTCTGTTCTTGGC  
ACTCATGGGGACAGGCATCCTGCTCGTCTGTGGGGCCCCGCTGGAGCCCTTACGTGAAGCT  
GAAGGTATCGACCSTAGGGGGCTCTAGGGCAGTGGGACCTTCATCCGGAACATAACAAGG  
TCGGGGAGAGGCCTCTTGGGCTATGTGGG

**FIG. 1Q**



17184.4

CAAGCGTTCCTTTATGGATGTAAATTCAAACAGTCATGCTGAGCCATCCCGGGCTGACAGT  
CACGTTWAAGACACTAGGTCGGGCGCCACAGTGCCACCCAAGGAGAAGAAGAATTTGGA  
ATTTTCCATGAAGATGTACGGAATCTGATGTTGAATATGAAAATGGCCCCAAATGGAA  
TTCCAAAAGGTTACCACAGGGGCTGTAAGACCTAGTGACCCTCCTAAGTGGGAAAGAGGA  
ATGGAGAATAGTATTTCTGATGCATCAAGAACATCAGAATATAAACTGAGATCATAATG  
AAGGAAAATTCATATCCAATATGAGTTTACTCAGAGACAGTAGAACTATTCCAGG

17185.1

TAGGAATAACAAATGTTTATTCAGAAATGGATAAGTAATACATAATCACCTTCATCTCTT  
AATGCCCTTCTCTCTCTCTGACAGGAGACAGATGGGTAAACATAGAGGCATGGGAA  
GTGGAGGAGGACACAGGACTAGCCACACCTTCTCTTCCCGGTCTCCCAAGATGACTGCT  
TATAGAGTGGAGGAGGCAAACAGGTCCCCTCAATGTACCAGATGGTCACCTATAGCACCA  
GCTCCAGATGGCCACGTGGTTGCAGCTGGACTCAATGAACTCTGTGACAACCAGAAGAT  
ACCTGCTTTGGGATGAGAGGGAGGATAAAGCCATGCAGGGAGGATATTTACCATCCCTAC  
CCTAAGCACAGTGCAAGCAGTGAGCCCCCGGTCCCAGTACCTGAAAAACCAAGGCCTAC  
TGNCTTTGGATGCTCTCTTGGGCCACG

17188.2

AAGCCTCCTGCCCTGGAAATCTGGAGCCCCCTGGAGCTGAGCTGGACGGGGCAGGGAGGG  
GCTGAGAGGCAAGACCGTCTCCCTCCTGCTGCAGCTGCTTCCCCAGCAGCCACTGCTGGGC  
ACAGCAGAAACGCCAGCAGAGAAAATGGGAGCCGAGAGTCCTTAGCCCTGGAGCTGAGG  
CTGCCTCTGGGCTGACCCGCTGGCTGTACGTGGCCAGAAGTGGGGTTGGCATCTGGCATCC  
ATTTGAGGCCAGGGTGGAGGAAAGGGAGGCCAACAGAGGAAAACCTATTCCTGCTGTGAC  
AACACAGCCCTTGTCACGACGCACTAAGTGCAGGGAGCGTGATGAAGTCAGGCAGCCAG  
TCGGGGAGGACGAGGTAACCTCAGCAGCAATGTACCTTGTAGCCTATGCGCTCAATGGCC  
CGGAGGGGCAGCAACCCCCCGCACAGTCAGCCAACAGCAGTGCCCTCTGCAGGCACCAAG  
AGAGCGATGATGGACTTGAGCGCCGTGTTT

17190.1

GTTTGGCAGAAGACATGTTTAATAACATTTTCATATTTAAAAAATACAGCAACAATTCTCT  
ATCTGTCCACCATCTTGCCCTTGCCTTCTGCGGGCTGAGGCAGACAAAGGAAAGGTAATGA  
GGTTAGGGCCCCCAGGCGGGCTAAGTGCTATTGGCCTGCTCCTGCTCAAAGAGAGCCATA  
GCCAGCTGGGCACGGCCCCCTAGCCCCCTCAGGTTGCTGAGGCGGCAGCGGTGGTAGAGT  
TCTTCACTGAGCCGTGGGCTGCAGTCTCGCAGGGAGAACTTCTGCACCAGCCCTGGCTCTA  
CGGCCCCGAAAGAGGTGGAGCCCTGAGAACCGGAGGAAAACATCCATCACCTCCAGCCCCCT  
CCAGGGCTTCTCTCTTCTTGGCCTGCCAGTTACCTGCCAGCCGGGCTCGGGCCGCCAG  
GTAGTCAGCGTTGTAGAAGCAGCCCTCCGAGAAGCCTGCCGGTCAAATCTCCCCGCTATA  
GGAGCCCCCGGGAGGGGTCAGCACC

FIG. 1R



17190.2

CAAGTTGAACGTCAGGCTTGGCAGAGGTGGAGTGTAGATGAAAACAAAGGTGTGATTATG  
AAGAGGATGTGAGTCCTTTGGGTGTAGGAGAGAAAGGCTGTTGAGCTTCTATTTCAAGAT  
ACTTTTACCTGTGCAAAAAGCACATTTCCACCTCCTTCTCATGGCATTGTGTAAAGGTGAG  
TATGATTCTATTCCATCTGCATTTTAGAGGTGAAGAATAACGTACAAGGGATTCAAGTGAT  
TAGCAAGGGACCCCTCACTAAGTGTGATGGAGTTAGGACAGAGCTCAGCTGTTTGAATCT  
CAGAGCCCAGGCAGCTGGAGCTGGGTAGGATCCTGGAGCTGGCACTAATGTGAGGTGCAT  
TCCCTCCAACCCAGGCTCAGATCCGGAACCTGACCGTGCTGACCCCCGAAGGGGAGGCAG  
GGCTGAGCTGGCCCGTTGGGCTCCCTGCTCCTTTCACACCACACTCTCGCTTTGAGGTGCTG  
GGCTGGGACTACTTCACAGAGCAGC

17191.2&89.2

TGGCCTGGGCAGGATTGGGAGAGAGGTAGCTACCCGGATGCAGTCCTTTGGGATGAAGAC  
TATAGGGTATGACCCCATCATTTCCCCAGAGGTCTCGGCCTCCTTTGGTGTTCAGCAGCTG  
CCCTGGAGGAGATCTGGCCTCTCTGTGATTTCACTACTGTGCACACTCCTCTCCTGCCCTC  
CACGACAGGCTTGCTGAATGACAACACCTTTGCCAGTGCAAGAAGGGGGTGCCTGTGGT  
GAACTGTGCCCGTGGAGGGATCGTGGACGAAGGCGCCCTGCTCCGGGCCCTGCAGTCTGG  
CCAGTGTGCCGGGGCTGCACTGGACGTGTTTACGGAAGAGCCGCCACGGGACCGGGCCTT  
GGTGGACCATGAGAAATGTCATCAGCTGTCCCCACCTGGGTGCCAGCACCAAGGAGGCTCA  
GAGCCGCTGTGGGGAGGAAATTGCTGTTTCAAGTTCGTGGACATGGTGAAGGGGAAATCTCT  
CACGGGGTTGTGAATGCCCAGGCCCTT

FIG. 1S



AGCCAGATGGCTGAGAGCTGCAAGAAGAAGTCAGGATCATGATGGCTCAGTTTCCACAG  
 CGATGAATGGAGGGCCAAATATGTGGGTATTACATCTGAAGAACGTACTAAGCATGATA  
 AACAGTTTGATAACCTCAAACCTTCAGGAGGTTACATAACAGGTGATCAAGCCCGTACTTT  
 TTTCCTACAGTCAGGCTGCTGCCGGCCCCGGTTTAGCTGAAATATGGGCCTTATCAGATCTG  
 AACAAAGGATGGGAAGATGGACCAGCAAGAGTTCTCTATAGCTATGAAACTCATCAAGTTA  
 AAGTTGCAGGGCCAAACAGCTGCCTGTAGTCCTCCCTCCTATCATGAAACAACCCCTATGT  
 TCTCTCCACTAATCTCTGCTCGTTTGGGATGGGAAGCATGCCCAATCTGTCCATTATCAG  
 CCATTGCCCTCAGTTGCACCTATAGCAACACCCCTGTCTTCTGCTACTTCAGGGACCAGTAT  
 TCCTCCCTTAATGATGCCTGCTCCCTAGTGCCTTCTGTTAGTACATCCTCATTACCAAATG  
 GAACTGCCAGTCTCATTAGCCTTTATCCATTCTTATTCTTCTCAACATTGCCTCATGCA  
 TCATCTTACAGCCTGATGATGGGAGGATTTGGTGGTGTAGTATCCAGAAGGCCAGTCTC  
 TGATTGATTTAGGATCTAGTAGCTCAACTTCCTCAACTGCTTCCTCTCAGGGAACCTCACT  
 AAGACAGGGACCTCAGAGTGGGCAGTTCCTCAGCCTTCAAGATTAAAGTATCGGCAAAAA  
 TTAAATAGTCTAGACAAAGGCATGAGCGGATACCTCTCAGGTTTTCAAGCTAGAAATGCC  
 TTCTTCAGTCAAACTCTCTCAAACTCAGCTAGCTACTATTGGACTCTGGTGACATCGAT  
 GGTGACGGACAGTTGAAAGCTGAAGAATTTATTCTGGCGATGCACCTCACTGACATGGCC  
 AAAGCTGGACAGCCACTACCACTGACGTTGCCTCCCGAGCTTGTCCCTCCATCTTTCAGAG  
 GGGGAAAGCAAGTTGATTCTGTTAATGGAAGTCTGCCTTCATATCAGAAAACACAAGAAG  
 AAGAGCCTCAGAAGAACTGCCAGTTACTTTTGGAGACAAACGGAAAGCCAATATGAAC  
 GAGGAAACATGGAGCTGGAGAAGCGACGCCAAGTGTGATGGAGCAGCAGAGAGGGAG  
 GCTGAACGCAAGCCAGAAAGAGAAGGAAGAGTGGGAGCGGAAACAGAGAGAACTGC  
 AAGAGCAAGAATGGAAGAAGCAGCTGGAGTTGGAGAAACGCTTGGAGAAACAGAGAGAG  
 CTGGAGAGACAGCGGGAGGAAGAGAGGAGAAAGGAGATAGAAAGACGAGAGGCAGCAA  
 AACAGGAGCTTGAGAGACAACGCCGTTTGAATGGGAAAGACTCCGTCGGCAGGAGCTGC  
 TCAGTCAGAAGACCAGGGAACAAGAAGACATTGTCAGGCTGAGCTCCAGAAAGAAAAGT  
 CTCCACCTGGAAGTGAAGCAGTGAATGGAAGACATCAGCAGATCTCAGGCAGACTACAA  
 GATGTCCAAATCAGAAAGCAAAACAAAAAGACTGAGCTAGAAAGTTTGGATAAACAGTGT  
 GACCTGGAAATTATGGAAATCAAAACACTTCAACAAGAGCTTAAGGAATATCAAAATAAG  
 CTTATCTATCTGGTCCCTGAGAAGCAGCTATTAACGAAAGAAATAAAAACATGCAGCTCA  
 GTAACACACCTGATTGAGGGATCAGTTTACTTCATAAAAAGTCATCAGAAAAGGAAGAAT  
 TATGCCAAAGACTTAAGAACAATTAGATGCTCTTGAAAAAGAACTGCATCTAAGCTCT  
 CAGAAATGGATTATTTAACAATCAGCTGAAGGAACTCAGAGAAAGCTATAATACACAGC  
 AGTTAGCCCTTGAACAACTTCATAAAATCAAACGTGACAAATTGAAGGAAATCGAAAGAA  
 AAAGATTAGAGCAAAAAAAAAAAAA

**FIG. 2A**



ATGGCAGTGACATTCACCATCATGGGAACACCTTCCCTTTTCTTCAGGATTCTCTGTAGTG  
GAAGAGAGCACCCAGTGTGGGCTGAAAACATCTGAAAGTAGGGAGAAGAACCTAAAAT  
AATCAGTATCTCAGAGGGCTCTAAGGTGCCAAGAAGTCTCACTGGACATTTAAGTGCCAA  
CAAAGGCATACTTTCGGAATCGCCAAGTCAAACTTTCTAACTTCTGTCTCTCAGAGAC  
AAGTGAGACTCAAGAGTCTACTGCTTTAGTGGCAACTACAGAAAACCTGGTGTTACCCAGA  
AAAACAGGAGCAATTAGAAATGGTTCCAATATTTCAAAGCTCCGCAAAACAGGATGTGCTT  
TCCTTTGCCCATTTAGGGTTTCTCTCTTTCCTTTCTCTTTATTAACCACTA

ATGGCAGTGACATTCACCATCATGGGAACACCTTCCCTTTTCTTCAGGATTCTCTGTAGTG  
GAAGAGAGCACCCAGTGTGGGCTGAAAACATCTGAAAGTAGGGAGAAGAACCTAAAAT  
AATCAGTATCTCAGAGGGCTCTAAGGTGCCAAGAAGTCTCACTGGACATTTAAGTGCCAA  
CAAAGGCATACTTTCGGAATCGCCAAGTCAAACTTTCTAACTTCTGTCTCTCAGAGAC  
AAGTGAGACTCAAGAGTCTACTGCTTTAGTGGCAACTACAGAAAACCTGGTGTTACCCAGA  
AAAACAGGAGCAATTAGAAATGGTTCCAATATTTCAAAGCTCCGCAAAACAGGATGTGCTT  
TCCTTTGCCCATTTAGGGTTTCTCTCTTTCCTTTCTCTTTATTAACCACTA

**FIG. 2B**



ATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAG  
 AAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAT  
 AATTCATGTGAAGTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAG  
 TGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTCACCTGGGGAGTGAGAGGACAGGAT  
 AGTGCATGTTCTTTGTCTCTGAATTTTIAAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGC  
 CCCTGGAAAAGTCTATCCCAACATATCCACATCTTATATTCACAAATIAAGCTGTAGTATG  
 TACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTA  
 ATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCACT  
 GACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGA  
 CACCGATTTTATAAATAAACTGAGCACCTTCTTTTAAACAAACAAATGCGGGTTTATTTCT  
 CAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGACTATATGGCATT  
 ATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGT  
 TTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGG  
 GAATGCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACT  
 ACCAACTAGTGGATAAAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTC  
 CCCATTACAACCTACCAATCCGAAGTGTCAACTGTGTCAGGACTAAGAAACCTGGTTTTG  
 AGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCATTAGTC  
 ATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTA  
 TCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCT  
 GATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAG  
 CCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATC  
 TCCAGACCCTTCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCA  
 CACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAG  
 CTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCACACTCTTCATGTGTTAACAC  
 TGCCTTCTGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTT  
 AGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTTA

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**FIG. 2C**



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Elementary Display										1" X	
Lab Exp	Probe 1	Exp	Probe 2	GI 1/1 Tumor	Flato/VWall	Probe 1	S/U	A%	Probe 2	S/U	A%
117	304A Ovary 1 (tumor)	1	212A Parathyroid Gland	422A0626 (420)	421G0196 (C11)	2303	13.7	50	1430	2.0	50
118	305A Ovary Tumor	1	57 Ovary 11	422A0626 (420)	421G0196 (C11)	355	2.7	54	382	1.0	54
119	306A Ovary Tumor	1	510 Skeletal muscle 11	422A0621 (420)	421G0196 (C11)	1290	6.8	51	707	1.9	51
120	307A Ovary Tumor	1	52 Pancreas 11	422A0629 (420)	421G0196 (C11)	9500	44.0	62	1100	2.3	62
121	308A	1	S40	422A0625 (420)	421G0196 (C11)	510	3.8	50	618	2.0	53
122	309A Ovary Tumor	1	C15 Heart 11	422A0624 (420)	421G0196 (C11)	2305	14.0	53	409	2.2	53
123	310A Ovary Tumor	1	C14 Bone Marrow 11	422A0619 (420)	421G0196 (C11)	531	3.5	53	743	2.0	53
124	311A	1	11	422A0609 (420)	421G0196 (C11)	1042	10.0	39	1071	2.0	30
125	312A Ovary Tumor	1	C19 Kidney 11	422A0627 (420)	421G0196 (C11)	453	3.3	68	857	3.2	36
126	313A 11	1	9405 5 11	422A0602 (420)	421G0196 (C11)	1082	12.2	57	504	2.3	57
127	314A Ovary Tumor	1	339A Lung 11	422A0627 (420)	421G0196 (C11)	1406	7.5	55	905	2.2	55
128	315A	1	C110	422A0604 (420)	421G0196 (C11)	500	3.4	51	573	2.0	51
129	316A Ovary Tumor	1	C112 Lung 11	422A0625 (420)	421G0196 (C11)	700	4.5	54	651	2.1	54
130	317A Ovary Tumor	1	556 Stomach 11	422A0621 (420)	421G0196 (C11)	625	4.6	46	1335	3.0	46
131	318A Ovary Tumor	1	556 Spinal Cord 11	422A0620 (420)	421G0196 (C11)	3006	22.2	50	502	2.2	50
132	319A	1	270A	422A0606 (420)	421G0196 (C11)	2251	14.7	46	1256	2.0	46
133	320A	1	12	422A0601 (420)	421G0196 (C11)	557	3.4	72	1029	2.3	72
134	321A Ovary 1	1	S01 Fetal tissue	422A0607 (420)	421G0196 (C11)	8126	35.6	50	1449	2.0	50
135	322A Ovary Tumor	1	S73 Breast 11	422A0623 (420)	421G0196 (C11)	439	3.2	61	1531	3.4	61
136	323A	1	C119	422A0610 (420)	421G0196 (C11)	387	3.2	50	1278	2.1	50
137	324A	1	S27	422A0603 (420)	421G0196 (C11)	4242	22.2	58	683	2.0	58

FIG. 3

53



[illegible]

**FIG. 4**



TAGCGYGGTCGCGGCCGAGGYCTGCTTYTCTGTCCAGCCCAGGGCCTGTGGGGTCAGGGC  
GGTGGGTGCAGATGGCATCCACTCCGGTGGCTTCCCCATCTTTCTCTGGCCTGAGCAAGGT  
CAGCCTGCAGCCAGAGTACAGAGGGCCAACACTGGTGTTCTTGAACAAGGGCCTTAGCAG  
GCCCCTGAAGGCCCTCTCTGTAGTGTGAACCTTCTGGAGCCAGGCCACATGTTCTCCTCAT  
ACCGCAGGYTAGYGATGGTGAAGTTGAGGGTGAATAAGTATTMANGRAGATGGCTGGCA  
RACCTGCCCCGGCGGCCGCTCSAAATCC

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**FIG. 6**



**A**

TTGGGGNTTTMGAGCGGCCGCCCGGGCAGGTACCGGGGTGGTCAGCGAGGAGCCATTAC  
ACTGAACCTTCACCATCAACAACCTGCGGTATGAGGAGAACATGCAGCACCCCTGGCTCCAG  
GAAGTTCAACACCACGGAGAGGGTCCTTCAGGGCCTGCTCAGGTCCCTGTTCAAGAGCAC  
CAGTGTGGCCCTCTGTAATCTGGCTGCAGACTGACTTTGCTCAGACTTGAGAAACATGGG  
GCAGCCACTGGAGTGGACGCCATCTGCACCTCCGCCCTTGATCCCACTGGTCCTGGACTGG  
ACAGAGAGCGGCTATACTGGGAGCTGAGCCAGTCCTCTGGCGGNGACNCCNCTT

**B**

AGCGTGGTCGCGGCCGAGGTCCAGTCGCAGCATGCTCTTTCTCCTGCCCACTGGCACAGTG  
AGGAAGATCTCTGCTGTCAGTGAGAAGGCTGTCATCCACTGAGATGGCAGTCAAAAGTGC  
ATTTAATACACCTAACGTATCGAACATCATAGCTTGGCCCAGGTTATCTCATATGTGCTCA  
GAACACTTACAATAGCCTGCAGACCTGCCCGGGCGGCCGCTCGA

**FIG. 7A and 7B**



TGTGGTGTGAACTTCCTGGAGNCAGGGTGACCCATGTCCTCCCCATACTGCAGGTTGGTG  
ATGGTGAAGTTGAGGGTGAATGGTACCAGGAGAGGGCCAGCAGCCATAATTGTSGRGCKG  
SMGMSSGAGGMWGGWGTYYCWGAGGTTTCYRARRTCCACTGTGGAGGTCCCAGGAGTGCT  
GGTGGTGGGCACAGAGSTCYGATGGGTGAAACCATGACATAGAGACTGTTCTGTCCAG  
GGTGTAGGGGCCAGCTCTTYRATGYCATTGGYCAGTTKGCTYAGCTCCAGTACAGCCRC  
TCTCKGYYGWCCAGSGCTTTTGGGGTCAAGATGATGGATGCAGATGGCATCCACTCCA  
GTGGCTGCTCCATCCTTCTCGGACCTGAGAGAGGTCAGTCTGCAGCCAGAGTACAGAGGG  
CCAACACTGGTGTCTTTGAATA

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FIG. 11

Gene Name	Bal Probe 1		P1	P2	Probe 2 Name	GEM ID	Probe1		Probe2		Probe1'		Probe2'	
	Exp Name						Value	A%	Value	A%	S/B	A%	S/B	A%
42100181 (C3)	018.8 485A Ovary T				S91 Fetal tissue	422X0607	26711		1424		103.3		2.0	54
42100181 (C3)	011.5 521 Ovary Tumor				S50 Spinal Cord N	422X0628	13559		1179		65.3		1.9	68
42100181 (C3)	011.1 476A Ovary T (met)				475A Aorta F	422X0611	14125		1273		67.3		5.6	
42100181 (C3)	010.8 305A Ovary T				270A Liver M	422X0606	16124		1488		93.1		2.1	
42100181 (C3)	05.1 265A Ovary Tumor				S71 Breast M	42210623	11326		2235		58.2		4.1	
42100181 (C3)	04.6 361A Ovary T (met)				272A Endometrial cells	42240608	6584		1424		24.5		3.1	40
42100181 (C3)	04.4 264A Ovary Tumor				S2 Pancreas F	42280639	9865		2243		40.9		1.6	61
42100181 (C3)	04.4 264A Ovary T (met)				361A Ovary N	42210614	2803		648		22.6		7.1	60
42100181 (C3)	04.2 261A Ovary Tumor				S10 Skeletal muscle	42210631	8271		1949		39.5		1.6	65
42100181 (C3)	03.6 511S Ovary T (met)				C110 Embryonic fibroblasts	42210604	2281		607		11.6		2.1	60
42100181 (C3)	02.5 265A Ovary Tumor				C75 Heart F	42210624	1492		1293		19.2		4.0	68
42100181 (C3)	01.1 512 Ovary Tumor				C79 Kidney F	42210627	565		1276		1.6		1.9	70
42100181 (C3)	01.2 266A Ovary T				377 Ovary M	42250603	2744		1260		14.3		2.7	46
42100181 (C3)	01.1 9111 Ovary T (SGH)				1251m F	42210601	1744		837		8.4		2.1	56
42100181 (C3)	01.9 948S 1 P Ovary T (S)				948S 1 P Ovary T (S)	422X0602	6967		3726		41.5		9.2	70
42100181 (C3)	01.6 362A Ovary T				C319 Brain M	42210610	2313		1471		6.2		1.9	50
42100181 (C3)	01.6 268A Ovary Tumor				C112 Lung M	422X0625	1657		1054		9.7		2.9	69
42100181 (C3)	01.5 525 Ovary Tumor				C71 Bone Marrow	42210619	848		1243		4.5		2.7	65
42100181 (C3)	01.4 267A Ovary Tumor				31A Lung fibroblasts	422X0622	7471		2244		16.8		1.8	69
42100181 (C3)	01.2 386A Ovary T				S40 Placenta	42210605	640		544		4.2		1.9	51
42100181 (C3)	01.2 115A Ovary Tumor				S7 Ovary N	42240626	592		740		3.7		2.6	75
42100181 (C3)	1.0 201A Ovary Tumor				S6 Stomach M	422X0620	1497		1237		7.8		1.5	
42100181 (C3)	1.0 428A Ovary T (met)				241A Esophagus M	42210612	783		797		4.5		2.1	
42100181 (C3)	361A Ovary T (met)				11 Colon M	42210609	3470		862		8.9		1.7	24

FIG. 11



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Gene Name	Probe 1		P1	Probe 2		P2	Name	GEM ID	Probe1		Probe2		Probe3	
	Exp Name	Exp Name		Exp Name	Exp Name				Value	S/B	Value	S/B	Value	S/B
42100182 (H7)	16.7 426A Ovary T (met)	16.7 426A Ovary T (met)	16.7 426A Ovary T (met)	16.7 426A Ovary T (met)	16.7 426A Ovary T (met)	16.7 426A Ovary T (met)	42100182	42100182	7706	46.3	462	4.5	75	7.5
42100182 (H7)	16.7 208A Ovary T	16.7 208A Ovary T	16.7 208A Ovary T	16.7 208A Ovary T	16.7 208A Ovary T	16.7 208A Ovary T	42100182	42100182	10171	61.2	950	1.8	41	4.1
42100182 (H7)	19.9 485A Ovary T	19.9 485A Ovary T	19.9 485A Ovary T	19.9 485A Ovary T	19.9 485A Ovary T	19.9 485A Ovary T	42100182	42100182	14415	62.1	1459	2.2	48	4.8
42100182 (H7)	18.8 511A Ovary Tumor	18.8 511A Ovary Tumor	18.8 511A Ovary Tumor	18.8 511A Ovary Tumor	18.8 511A Ovary Tumor	18.8 511A Ovary Tumor	42100182	42100182	7781	47.3	880	3.3	71	7.1
42100182 (H7)	16.3 381A Ovary T (met)	16.3 381A Ovary T (met)	16.3 381A Ovary T (met)	16.3 381A Ovary T (met)	16.3 381A Ovary T (met)	16.3 381A Ovary T (met)	42100182	42100182	4807	27.6	748	2.2	47	4.7
42100182 (H7)	16.4 261A Ovary Tumor	16.4 261A Ovary Tumor	16.4 261A Ovary Tumor	16.4 261A Ovary Tumor	16.4 261A Ovary Tumor	16.4 261A Ovary Tumor	42100182	42100182	9815	57.1	1989	4.2	74	7.4
42100182 (H7)	14.9 429A Ovary T (met)	14.9 429A Ovary T (met)	14.9 429A Ovary T (met)	14.9 429A Ovary T (met)	14.9 429A Ovary T (met)	14.9 429A Ovary T (met)	42100182	42100182	2604	20.1	513	6.7	61	6.1
42100182 (H7)	13.5 261A Ovary Tumor	13.5 261A Ovary Tumor	13.5 261A Ovary Tumor	13.5 261A Ovary Tumor	13.5 261A Ovary Tumor	13.5 261A Ovary Tumor	42100182	42100182	7934	38.8	2274	3.9	71	7.1
42100182 (H7)	2.9 575 Ovary Tumor	2.9 575 Ovary Tumor	2.9 575 Ovary Tumor	2.9 575 Ovary Tumor	2.9 575 Ovary Tumor	2.9 575 Ovary Tumor	42100182	42100182	480	1.5	1375	1.0	80	8.0
42100182 (H7)	12.8 261A Ovary Tumor	12.8 261A Ovary Tumor	12.8 261A Ovary Tumor	12.8 261A Ovary Tumor	12.8 261A Ovary Tumor	12.8 261A Ovary Tumor	42100182	42100182	8094	34.6	3345	5.1	69	6.9
42100182 (H7)	12.3 511A Ovary T (met)	12.3 511A Ovary T (met)	12.3 511A Ovary T (met)	12.3 511A Ovary T (met)	12.3 511A Ovary T (met)	12.3 511A Ovary T (met)	42100182	42100182	1864	8.1	748	2.2	67	6.7
42100182 (H7)	12.3 931A Ovary T (met)	12.3 931A Ovary T (met)	12.3 931A Ovary T (met)	12.3 931A Ovary T (met)	12.3 931A Ovary T (met)	12.3 931A Ovary T (met)	42100182	42100182	2552	12.7	1114	2.6	41	4.1
42100182 (H7)	2.3 512 Ovary Tumor	2.3 512 Ovary Tumor	2.3 512 Ovary Tumor	2.3 512 Ovary Tumor	2.3 512 Ovary Tumor	2.3 512 Ovary Tumor	42100182	42100182	386	3.2	889	3.4	69	6.9
42100182 (H7)	12.3 381A Ovary T (met)	12.3 381A Ovary T (met)	12.3 381A Ovary T (met)	12.3 381A Ovary T (met)	12.3 381A Ovary T (met)	12.3 381A Ovary T (met)	42100182	42100182	1516	18.7	1567	2.2	55	5.5
42100182 (H7)	2.2 382A Ovary T	2.2 382A Ovary T	2.2 382A Ovary T	2.2 382A Ovary T	2.2 382A Ovary T	2.2 382A Ovary T	42100182	42100182	608	4.2	1320	2.3	60	6.0
42100182 (H7)	11.9 265A Ovary Tumor	11.9 265A Ovary Tumor	11.9 265A Ovary Tumor	11.9 265A Ovary Tumor	11.9 265A Ovary Tumor	11.9 265A Ovary Tumor	42100182	42100182	2064	13.6	1080	3.5	97	9.7
42100182 (H7)	11.8 266A Ovary T	11.8 266A Ovary T	11.8 266A Ovary T	11.8 266A Ovary T	11.8 266A Ovary T	11.8 266A Ovary T	42100182	42100182	1520	7.0	847	2.1	58	5.8
42100182 (H7)	11.8 267A Ovary Tumor	11.8 267A Ovary Tumor	11.8 267A Ovary Tumor	11.8 267A Ovary Tumor	11.8 267A Ovary Tumor	11.8 267A Ovary Tumor	42100182	42100182	2546	13.2	1651	3.2	73	7.3
42100182 (H7)	11.4 386A Ovary T	11.4 386A Ovary T	11.4 386A Ovary T	11.4 386A Ovary T	11.4 386A Ovary T	11.4 386A Ovary T	42100182	42100182	534	3.9	748	2.2	62	6.2
42100182 (H7)	11.3 288A Ovary Tumor	11.3 288A Ovary Tumor	11.3 288A Ovary Tumor	11.3 288A Ovary Tumor	11.3 288A Ovary Tumor	11.3 288A Ovary Tumor	42100182	42100182	894	5.3	1120	3.1	66	6.6
42100182 (H7)	11.2 115A Ovary Tumor	11.2 115A Ovary Tumor	11.2 115A Ovary Tumor	11.2 115A Ovary Tumor	11.2 115A Ovary Tumor	11.2 115A Ovary Tumor	42100182	42100182	440	3.3	567	2.2	60	6.0
42100182 (H7)	11.2 9185 Ovary T (met)	11.2 9185 Ovary T (met)	11.2 9185 Ovary T (met)	11.2 9185 Ovary T (met)	11.2 9185 Ovary T (met)	11.2 9185 Ovary T (met)	42100182	42100182	4188	21.6	3529	9.5	66	6.6
42100182 (H7)	11.1 428A Ovary T (met)	11.1 428A Ovary T (met)	11.1 428A Ovary T (met)	11.1 428A Ovary T (met)	11.1 428A Ovary T (met)	11.1 428A Ovary T (met)	42100182	42100182	725	6.2	689	2.8	65	6.5
42100182 (H7)	11.0 201A Ovary Tumor	11.0 201A Ovary Tumor	11.0 201A Ovary Tumor	11.0 201A Ovary Tumor	11.0 201A Ovary Tumor	11.0 201A Ovary Tumor	42100182	42100182	1018	7.4	1018	3.2	42	4.2

FIG. 12

32











11721-1

ACGGTTTCAATGGACACTTTTATTGTTTACTTAATGGATCATCAATTTTGTCTCACTACCTA  
CAAATGGAATTTTCATCTGTGTTTCCATGCTGAGTAGTGAAACAGTGACAAAGCTAATCATAA  
TAACCTACATCAAAAGAGAACTAAGCTAACACTGCTCACTTTCTTTTAAACAGGCAAAATA  
TAAATATATGCACTCTAXAATGCACAATGGTTTAGTCACTAAAAAATTCAAATGGGATCTT  
GAAGAATGTATGCAAAATCCAGGGTGCAGTGAAGATGAGCTGAGATGCTGTGCAACTGTTT  
AAGGGTTCCTGGCACTGCATCTCTTGGCCACTAGCTGAATCTTGACATGGAAGGTTTATG  
TAATGCCAAGTGGAGATGCAGAAAATGCTAAGTTGACTTAGGGGCTGTGCACAGGAACTA  
AAAGGCAGGAAAGTACTAAATATTGCTGAGAGCATCCACCCAGGAAGGACTTTACCTTC  
CAGGAGCTCCAACTGGCACCACCCCACTGCTCAGTGGCTGACTTTATCCTCCGTGTTT  
CATTTGGCACAGCAAGTGGCAGTG

11721-2

AAGGCTGGTGGGTTTTGATCCTGCTGGAGAACCTCCGCTTTCATGTGGAGGAAGAAGGG  
AAGGGAAAAGATGCTTCTGGGAACAAGGTTAAAGCCGAGCCAGCCAAAATAGAAGCTTTC  
CGAGCTTCACTTTCCAAGCTAGGGGATGTCTATGTCAATGATGCTTTTGGCACTGCTCACA  
GAGCCACAGCTCCATGGTAGGAGTCAATCTGCCACAGAAGGCTGGTGGGTTTTTGATGA  
AGAAGGAGCTGAACACTTTGCAAAGGCCTTGGAGAGCCAGAGCGACCTTCTGGCCA  
TCTTGGGCGGAGCTAAAGTTGCAGACAAGATCCAGCTCATCAATAATGCTGGACAAAAG  
TCAATGAGATGATTATTGGTGGTGAATGGCTTTTACCTTCTTAAGGTGCTCAACAACAT  
GGAGATTGGCACTTCTCTGTTTATGAAGAGGGAGCCAAGATTGTCAAAGACCTAATGTCC  
AAAGCTGAGAAAGATGGTGTGAAGATTACCTTGCTTGTGACTTTGCACTGCTGACAAGT  
TTGATGA

11724-1

TTTGTCTCTTACATTTTCTAAAGAGTTACTTAAATCAGTCAACTGGTCTTTGAGACTCTTA  
AGTTCTGATTCCAACCTAGCTAATTCATTCTGAGAACTGTGGTATAGGTGGCGTGTCTCTTC  
TAGCTGGGACAAAAGTTCTTTGTTTCCCCCTGTAGAGTATCACAGACCTTCTGCTGAAGC  
TGGACCTCTGTCTGGGCCTTGGACTCCCAAATCTGCTTGTCTGTTCAAGCCTGGAAATGTT  
AATCTTTAATCTTCCATATGGATGGACATCTGTCTAAGTTGATCCTTTAGAACACTGCAAT  
TATCTTCTTTGAGTCTAATTTCTTCTTCTTGTGCTTGAATCGCATCACTAAACTTCTCTCCC  
ATTTCTTAGCTTATCTATCACCTGTACGATCATCTGGAGGGAAGACATGCTCTTAGTA  
AAGGCTGCAAGCTGGGTACAGTACTGTCCAAGTTTCTGAAAGTTGCTGAACTTCTTGT  
CTTTCTTGTCAAAGTAACCTGAATCTCTCAATTGTCTCTTCCAAGTGGACTTTTCTCTGC  
GCAAAGCATCCAG

11724-2

TCATTGCCTGTGATGGCATCTGGAATGTGATGAGCAGCCAGGAAGTTGTAGATTTTATTCA  
ATCAAAGGATTCAGCATGTGGTGAAGCTGTGAGGCAAGAGAAACAAGAACTGTATGGCA  
AGTTAAGAAGCACAGAGGCAACAAGAAGGAGACAGAAAAGCAGTTGCAGGAAGCTGAG  
CAAGAAATGGAGGAAATGAAAGAAAAGATGAGAAAGTTTGCTAAATCTAAACAGCAGAA  
AATCCTAGAGCTGGAAGAAGAGAATGACCGGCTTAGGGCAGAGGTGCACCTGCAGGAG  
ATACAGCTAAAGAGTGTATGGAAAACACTTCTTCTTCCAATGCCAGCATGAAGGAAGAAC  
TTGAAAGGGTCAAAATGGAGTATGAAACCCTTTCTAAGAAGTTTCACTCTTTAATGTCTGA  
GAAAGACTCTCTAAGTGAAGAGGTTCAAGATTTAAAGCATCAGATAGAAGGTAATGTATC  
TAAACAAGCTAACCTAGAGGCCACCGAGAAACATGATAACCAACGAATGTCACTGAAGA  
GGGAACACAGTCTATACCAGT

FIG. 15A



[illegible]

11726-1&2

11727-1&2

FIG. 15B



11728.1.40.19.19

TACAAACTTTATTGAAACGCACACGCGCACACACAAACACCCCTGTGGATAGGGAAAA  
GCACCTGGCCACAGGGTCCACTGAAACGGGGAGGGGATGGCAGCTTGTAAATGTGGCTTTT  
GCCACAACCCCTTCTGACAGGGAAGGCCTTAGATTGAGGCCACCTCCCATGGTGATGG  
GGAGCTCAGAATGGGGTCCAGGGAGAATTTGGTTAGGGGGAGGTGCTAGGGAGGCATGA  
GCAGAGGGCACCTCCGAGTGGGGTCCCGAGGGCTGCAGAGTCTTCAGTACTGTCCCTCAC  
AGCAGCTGTCTCAAGGCTGGGTCCCTCAAAGGGGCGTCCCAGCGGGGGCTCCCTGCGC  
AAACACTTGGTACCCTGGCTGCGCAGCGGAAGCCAGCAGGACAGCAGTGGCGCCGATCA  
GCACAACAGACGCCCTGGCGGTAGGGACAGCAGGCCAGCCCTGTCGGTTGTCTCGGCAG  
CAGGTCTGGTTATCATGGCAGAAGTGTCTTCCCACTTCACGTCCTTCACCCACGCTG  
AXGGCTACXGGCCAGGAAG

11728.2.40.19.19

CCCGTGGGTGCCATCCACGGAGTTGTTACCTGATCTTTGGAAGCAGGATCGCCCGTGTGCA  
CTGCAGTGGAAAGCCCGTGGGCAGCAGTGTATGGCCATCCCCGCATGCCACGGCCTCTGGG  
AAGGGGCAGCAACTGGAAGTCCCTGAGACGGTAAAGATGCAGGAGTGGCCGGCAGAGCA  
GTGGGCATCAACCTGGCAGGGGCCACCCAGATGCTGCTCAGTGTGTGGGCCATTTGTCC  
AGAAGGGGACGGCAGCAGCTGTAGCTGGCTCTCCGGGGTCCAGGCAGCAGGCCACAGGG  
CAGAAGTACCCTGTCGGGCACCGCTTCCAGCCACCAGCCCTGCTGTTAAGGCCACCCAGC  
TCACCAGGTCCACATGGTCTGCTGCGTCCGACTCCGCGTCTTGGGCCCTGATGGTTC  
TACCTGCTGTGAGCTGCCAGTGGGAAGTATGGCTGCTGCCAATGCCAACGCCACCTGCT  
GCTCCGATCACCTGCACTGCTGCCCCAAGACACTGTGTGTGACCTGATCCAGAGTAAGTGC  
CTCTCCAAGGAGAACG

11730-1

GAATCACCTTTCTGGTTTAGCTAGTACTTTGTACAGAAACATGAGGTTTCCACAGCGGAG  
TCTCCTGGGCTCTGTTTGGCTCTCGGTAAGGCAGGCCACACCTTTCTCTCTCTATGG  
AGAGGGGAATATGCATTAAAGGTGAAAAGTCACCTTCCAAAAGTGAGAAAGGGATTGATT  
GCTGCTTCAGGACTGTGGAATTATTTGGAATGTTTACAAATGGTTGTACAAAACAAACAA  
AAAAGGTAATTACAAAATGTGTACATCACAAACATGCTTTTAAAGACATTATGCATTGTGC  
TCACATTCCCTTAAATGTTTCCAAAGGTGCTCAGCCTCTAGCCCAGCTGGATTCTCCGG  
GAAGAGGCAGAGACAGTTTGGCGAAAAAGACACAGGGAAGGAGGGGGTGGTGAAAGGA  
GAAAGCAGCCTTCCAGTTAAAGATCAGCCCTCAGTTAAAGGTGAGCTTCCCGCAXGTGGC  
CTCAXGCGGAGTCTGGGTGAGAGGGAGGAGCAGCAGCAGGGTGGGACTGGGGCGT

11730-2

AACCGGAGCGCGAGCAGTAGCTGGGTGGGCACCATGGCTGGGATCACCACCATCGAGGCG  
GTGAAGCGCAAGATCCAGGTTCTGCAGCAGCAGGCAGATGATGCAGAGGAGCGAGCTGA  
GCGCCTCCAGCGAGAAGTTGAGGGAGAAAGCGGGCCCGGGAACAGGCTGAGGCTGAGG  
TGGCCTCCTTGAACCGTAGGATCCAGCTGGTTGAAGAAGAGCTGGACCGTCTCAGGAGC  
GCCTGGCCACTGCCCTGCAAAAGCTGGAAGAAGCTGAAAAGCTGCTGATGAGAGTGAGA  
GAGGTATGAAGGTTATTGAAAACCGGGCCCTTAAAAGATGAAGAAAAGATGGAAGTCCAG  
GAAATCCAACCTCAAAGAAGCTAAGCACATTGCAGAAGAGGCAGATAGGAAGTATGAAGA  
GGTGGCTCGTAAGTTGGTGATCATTGAAGGAGACTTGAACGCGACAGAGGAACGAGCTGA  
GCTGGCAGAGTCCCGTTGCCGAGAGATGGATGAGCAGATTAGACTGATGGACCAGAACCT  
GAAGTGTCTGAGTGC

FIG. 15C



11732.1contig

GAGAACTTGGCCTTTATTGTGGGCCCAGGAGGGCACAAGGTCAGGAGGCCCAAGGGAGG  
GATCTGGTTTCTGGATAGCCAGGTCATAGCATGGGTATCAGTAGGAATCCGCTGTAGCTG  
CACAGGCCTCACTTGCTGCAAGTTCCGGGGAGAACACCTGCACTGCATGGCGTTGATGACCT  
CGTGGTACACGACAGAGCCATTGGTGCAGTGCAAGGGCACGUGCATGGGCTCCGTCCTCG  
AGGGCAGGCAGCAGGAGCATTGCTCCTGCACATCCTCGATGTCAATGGAGTACACAGCTT  
TGCTGGCACACTTCCCTGGCAGTAATGAATGTCCACTTCTCTGGGACTTACAATCTCCC  
ACTTTGATGTACTGCACCTTGGCTGTGATGTCTTTGCAATCAGGCTCCTCACATGTGTCACA  
GCAGGTGCCTGGAATTTTACGATTTTGCCTCCTTCAGCCAGACACTTGTGTTCAATAATG  
GTGGGCAGCCCGTGACCTCTTCTCCAGATGTAATCTCCTCT

11732.2contig

GCCTGGACCTTGCCGGATCAGTGCCACACAGTGACTTGCTTGGCAAATGGCCAGACCTTGC  
TGCAGAGTCATCGTGTCAATTGTGACCATGGACCCCGGCTTCATGTGCCAACAGCCAGTC  
TCCTGTTCCGGGTGGAGGAGACGTGTGGCTGCCGCTGGACCTGCCCTTGTGTGTGCACGGGC  
AGTTCCACTCGGCACATCGTCACCTTCGATGGGCAGAAATTTCAAGTTACTGGTAGCTGCT  
CCTATGTCACTCTTCAAACAAGGAGCAGGACCTGGAAGTGCTCCTCCACAATGGGGCCTG  
CAGCCCCGGGGCAAAACAAGCCTGCATGAAGTCCATTGAGATTAAGCATGCTGGCGTCTC  
TGCTGAGCTGCACAGTAACATGGAGATGGCAGTGGATGGGAGACTGGTCTTGCCCCGTA  
CGTTGGTGAAAACATGGAAGTCAGCATCTACGGCGCTATCATGTATGAAGTCAGGTTTACC  
CATCTTGGCCACATCCTCACATACACGCCXCAAAACAACGAGTT

11735-1-2

AGATCAACCTCTGCTGGTCAGGAGGAATGCCTTCTTGGATCTTTGCTTTGACGTTCT  
TCGATAGTRWCAaCTKKRYTSRAMSKMAAGKGYRATGRWMTTKSYWGWRAASYKTMWWM  
RSGRARAyTTaGaCAYCCMCCTCWgAGaCGSAGKACCARGTGCAgAgGTGGACTCTTCTG  
GATGTTGTAGTCAGACAGGGTGCGTCCATCTTCCAGCTGTTTCCAGCAAAGATCAACCTC  
TGCTGATCAGGAGGGATGCCTTCTTATCTTGGATCTTTGCCTTGACATTCTCGATGGTGT  
ACTGGGCTCCACCTCGAGGGTGATGGTCTTACCAGTCAGGGTCTTACGAAGATYTGATC  
CCACCTCTGAGACGGAGCACCAGGTGCAGGGTRGACTCTTCTGGATGTTGTAGTCAGACA  
GGGTGCGYCCATCTTCCAGCTGcTTTCCSaGCAAAGATCAACCTCTGCTGGTCAGGAGGRAT  
GCCTTCTTGTCTYGGATCTTTGCTTTGACRTTCTCRATGGTGTCACTCGGCTCCACTTCGA  
GAGTGATGGTCTTACCAGTCAGGGTCTTACGAAGATCTGCATCCCACTCTAA

11740.2.contig

AAGTCACAAACAGACAAAGATTATTACCAGCTGCAAGCTATATTAGAAGCTGAACGAAGA  
GACAGAGGTCATGATTCTGAGATGATTGGAGACCTTCAAGCTCGAATTACATCTTTACAAG  
AGGAGGTGAAGCATCTCAAACATAATCTCGAAAAAGTGGAAGGAGAAAGAAAAGAGGCT  
CAAGACATGCTTAATCACTCAGAAAAGGAAAAGAATAATTTAGAGATAGATTTAACTAC  
AAACTTAAATCATTACAACAACGGTTAGAACAAGAGGTAAATGAACACAAAGTAACCAAA  
GCTCGTTAACTGACAAACATCAATCTATTGAAGAGGCAAAAGTCTGTGGCAATGTGTGAG  
ATGGAAGAAAAAGCTGAAAGAAGAAAGAGAAGCTCGAGAGAAGGCTGAAAATCGGGTTGT  
TCAGATTGAGAAACAGTGTTCATGCTAGACGTTGATCTGAAGCAATCTCAGCAGAAACT  
AGAACATTTGACTGGAATAAAGAAAGGATGGAGGATGAAGTTAAGAATCTA



11765.2&64.2.contig

CGCCTCCACCATGTCCATCAGGGTGACCCAGAAGTCCTACAAGGTGTCCACCTCTGGCCCC  
 CCGGCCTTCAGCAGCCGCTCCTACACGAGTGGGCCCGGTTCGCCATCAGCTCCTCGAGCT  
 TCTCCCGAGTGGGCAGCAGCAACTTTCCGGTGGCCTGGGCGCGGCTATGGTGGGGCCA  
 GCGGCATGGGAGGCATACCCGAGTTACGGTCAACCAGAGCCTGCTGAGCCCCCTTGTCT  
 GGAGGTGGACCCCAACATCCAGGCCGTGCGCACCCAGGAGAAGGAGCAGATCAAGACCCT  
 CAACAACAAGTTGCCTCCTCATAGACAAGGTACGGTTCCTGGAGCAGCAGAACAAAGAT  
 GCTGGAGACCAAGTGGAGCCTCCTGCAGCAGCAGAAGACGGCTCGAAGCAACATGGACA  
 ACATGTTTCAGAGCTACATCAACARCTTAGGCGGCAGCTGGAGACTCTGGGCCAGGAGA  
 AGCTGAAGCTGGAGGCGGAGCTTGGCAACATGCAGGGGCTGGTGGAGGACTTCAAGAAC  
 AAGTATGAGGATGAGATCAATAAGCGTACAGAGATGGAGAACGAATTTGTCCTCATCAAG  
 AAGGATGTGGATGAAGCTTACATGAACAAGGTAGAGCTGGAGTCTCGCCTGGAAGGGCTG  
 ACCGACGAGATCAACTTCTCAGGCAGCTGTATGAAGAGGAGATCCGGGAGCTGCAGTCC  
 CAGATCTCGGACACATCTGTGGTGTCTCCATGGACAACAGCCGCTCCCTGGACATGGACA  
 GCATCATTGCTGAGGTCAAGGCACAGTACGAGGATATTGCCAACCGCAGCCGGGCTGAGG  
 CTGAGAGCATGTACCAGGTCAAGTATGAGGAGCTGCAGAGCCTGGCTGGGAAGCACGGGG  
 ATGACCTGCGGCGCACAAAGACTGAGATCTCTGAGATGAACCCGGAACATCAGCCCCGGCT  
 XCAGGCTGAGATTGAGGGCCTCAAAGGCCAGAXGGCTTXCCTGGAXGXCCGCCAT

11767.2.contig

CCCGGAGCCAGCCAACGAGCGGAAATGGCAGACAATTTTTCGCTCCATGATGCGTTATCT  
 GGGTCTGGAACCCAAACCCTCAAGGATGGCCTGGCGCATGGGGGAACCAGCCTGCTGGG  
 GCAGGGGGCTACCCAGGGGCTTCTATCCTGGGGCTACCCCGGGCAGGCACCCCAAGG  
 GCTTATCCTGGACAGGCACCTCCAGGCGCTACCTGGAGCAGCTGGAGCTTATCCCGGAG  
 CACCTGCACCTGGAGTCTACCCAGGGCCACCCAGCGGCCCTGGGGCTACCCATCTTCTGG  
 ACAGCCAAGTGCCACCGAGCCTACCTGCCACTGGCCCCTATGGCGCCCCTGCTGGGCCA  
 CTGATTGTGCTTATAACCTGCCTTTGCCTGGGGAGTGGTGCCTCGCATGCTGATAACAA  
 TTCTGGGCACGGTGAAGCCCAATGCAAAACAGAATTGCTTTAGATTTCAAAGAGGGAATG  
 ATGTTGCCTTCCACTTTAACCACGCTTCAATGAGAACAACAGGAGAGTCATTGGTTGCAA  
 TACAAAGCTGGATAA

11768-1&2

GGGAATGCAACAACCTTTATTGAAAGGAAAGTGCAATGAAATTTGTTGAAACCTTAAAGG  
 GGAAACTTAGACACCCCCCTCRAgCGMAGKACCARGTGCAAgGTGGACTCTTCTGGAT  
 GTTGTAGTCAGACAGGGTRCGWCCATCTTCCAGCTGTTTYCCRGCAAAGATCAACCTCTGC  
 TGATCAGGAGGRATGCCTTCCTTATCTTGGATCTTTCCTTGACATTCTCGATGGTGTACT  
 GGGCTCCACCTCGAGGGTGATGGTCTTACCAGTCAGGGTCTTACGAAGATYTGATCCCA  
 CCTCTGAGACGGAGCACAGGTGCAGGGTRGACTCTTCTGGATGTTGTAGTCAGACAGG  
 GTGCGYCCATCTTCCAGCTGcTTTCCSaGCAAAGATCAACCTCTGCTGGTCAGGAGGRATGC  
 CTTCTTGTCTGTGGATCTTTGCTTGTGACRTTCTCAATGGTGTCACTCGGCTCCACTTCGAGA  
 GTGATGGTCTTACCAGTCAGGGTCTTACGAAGATCTGCATCCACCTCTAAGACGGAGCA  
 CCAGGTGCAGGGTGGACTCTTCTGGATGgTTGTAGTCAGACAGGGTGCGTCCATCTTCCA  
 GCTGTTTCCAGCAAAGATCAACCT

FIG. 15E



11768-1&2-11735-1&2

AGGTTGATCTTTGCTGGGAAACAGCTGGAAGATGGACGCCCTGTCTGACTACAAcCATC  
CAGAAAGAGTCCACCTGCACCTGGTGCTCCGTCTTAGAGGTGGGATGCAGATCTTCGTGA  
AGACCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCGAGTGACACCATTGAGAAAG  
TCAARGCAAAGATCCARGACAAGGAAGGCATYCCTCCTGACCAGCAGAGGTTGATCTTTG  
CISGGAAAagCAGCTGGAAGATGGRCGCACCCTGTCTGACTACAACATCCAGAAAGAGTCYA  
CCCTGCACCTGGTGCTCCGTCTCAGAGGTGGGATGCAARATCTTCGTGAAGACCCTGACTGG  
TAAGACCATCACCTCGAGGTGGAGCCCAGTGACACCATCGAGAATGTCAAGGCAAAGAT  
CCAAGATAAGGAAGGCATCCCTCCTGATCAGCAGAGGTTGATCTTTGCTGGGAAACAGCT  
GGAAGATGGACGCCCTGTCTGACTACAACATCCAGAAAGAGTCCACcTYTGCACYTGGT  
MCTBCGtCTYaGAGGKGGGRTGcaaaTCTWMGKWaCaCiCaCTKKYAAGRYYaTCAMCMWt  
gAKKTCgAKYSCASTKWCaCTWTCRAKAAMGTYRWWGCAWagaTCCMAGACAAGGAAGGC  
ATTCTCCTGACCAGCAGAGGTTGATCT

11769.1.contig

ATGGAGTCTACTCTGTGCGACCAGGCTGGAGCGCTGTGGTGCGATATCGGCTcACTGCAGT  
CTCCACTTCTGGGTTCAAGCGATCTCTGCCTCAGCCTCCCGAGTAGCTGGGACTACAG  
GCAGGCGTCACCATAATTTTGTATTTTATAGTAGAGACATGGTTTCGCCATGTTGGCTGGG  
CTGGTCTCGAACTCCTGACCTCAAGTGATCTGTCTGGCCTCCCAAAGTGTGGGATTACA  
GGCGAAAGCCAACGCTCCCGGCCAGGGAACAACCTTTAGAATGAAGGAAATATGCAAAAG  
AACATCACATCAAGGATCAATTAATTACCATCTATTAATTACTATATGTGGGTAAATTATGA  
CTATTTCCCAAGCATTTCTACGTTGACTGCTTGAGAAGATGTTTGTCTGCATGGTGGAGAG  
TGGAGAAGGGCCAGGATTCTTAGGTT

11769.2.contig

AGCGCGGTCTTCCGGCGCGAGAAAGCTGAAGGTGATGTGGCCGCCCTCAACCGACGCATC  
CAGCTCGTTGAGGAGGAGTTGGACAGGCTCAGGAACGACTGGCCACGGCCCTGCAGAAAG  
CTGGAGGAGGCAGAAAAAGCTGCAGATGAGAGTGAGAGAGGAATGAAGGTGATAGAAAA  
CCGGGCCATGAAGGATGAGGAGAAGATGGAGATTCAGGAGATGCAGCTCAAAGAGGCCA  
AGCACATTGCGGAAGAGGCTGACCGCAAATACGAGGAGGTAGCTCGTAAGCTGGTCATCC  
TGGAGGGTGAGCTGGAGAGGGCAGAGGAGCGTGCGGAGGTGTCTGAACTAAAAATGTGGT  
GACCTGGAAGAAGAACTCAAGAAATGTTACTAACAATCTGAAATCTCTGGAGGCTGCATCT  
GAAAAGTATTCTGAAAAGGAGGACAAATATGAAGAAGAAATTAACCTTCTGTCTGACAAA  
CTGAAAGAGGCTGAGACCCGTGCTGAATTTGCAGAGAGAACGGTTGCAAACTGGAAAAG  
ACAATTGATGACCTGGAAGAGAACTTGCCACG

11770.1.contig

GTGCACAGGTCCCATTTATTGTAGAAAAATAATAAATTACAGTGATGAATAGCTCTTCTT  
AAATTACAAAACAGAAACCACAAAGAAGGAAGAGGAAAAACCCAGGACTTCCAAGGGT  
GAAGCTGTCCCTCTCTCCCTGCCACCTCCCAGGCTCATTAGTGTCTTGGAAGGGGCAGA  
GGAAGTCAAGAGGGATCAGTCTCAGGGGGCCCTGGGCTGAAGCGGGTGAGGCAGAGAGTCC  
TGAGGCCACAGAGCTGGGCAACCTGAGCCGCCTCTCTGGCCCCCTCCCCACCACTGCCCA  
AACCTGTTTACAGCACCTTCGCCCCCTCCCTCTAAACCCGTCCATCCACTCTGCATTTCCA  
GGCAGGTGGGTGGCCAGGCCTCAGCCATACTCCTGGGCGCGGGTTTCGGTGAGCAAGGC  
ACAGTCCCAGAGGTGATATCAAGGCCT

FIG. 15F



11770.2.contig

GCAAGGAAC TGGTCTGCTCACA CTGCTGGCTTGGCATCAGGACTGGCTTTATCTCCTGA  
CTCACGGTGCAAAGGTGCACTCTGCGAACGTTAAGTCCGTCCCCAGCGCTTGGAACTCTAC  
GGCCCCCAGCGCGATCCCCCTCAGCCTTCCAGGTCC TCAACTCCGTGGACGCTGAACAA  
TGGCCTCCATGGGGCTACAGGTAATGGGCATCGCGCTGGCCGTCTGGGCTGGCTGGCCGT  
CATGCTGTGCTGCGCGCTGCCCATGTGGCGCGTGACGGCCTTCATCGGCAGCAACATTGTC  
ACCTCGCAGACCATCTGGGAGGGCCTATGGATGAACTGCGTGGTGAGAGCACCGGCCAG  
ATGCAGTGCAAGGTGTACGACTCGCTGCTGGCACTGCCGACGACCTGCAGGCGGGCCCG  
GCCCTCGTCATCATCA

11773.1.contig

TGCAAAAGGGACACAGGGGTTCAAAAATAAAAATTTCTCTTCCCCCTCCCCAAACCTGTAC  
CCCAGCTCCCCGACCACAACCCCTTCTCCCCGGGAAAGCAAGAAGGAGCAGGTGTG  
GCATCTGCAGCTGGGAAGAGAGAGGGCCGGGAGGTGCCGAGCTCGGTGCTGGTCTCTTC  
CAAAATAAAATACXTGTGTGCAAGCTGGAATACTCCAGCACCCACCACCAAGCACTCT  
CCGTTTTCTGCCGTGTTTGGAGAGGGGCGGGGGGAGGGGCGCCAGGCACCGGCTGGCT  
GCGGTCTACTGCATCCGCTGGGTGTGCACCCCGGAGCCTCTGCTGCTCATTGTAGAAGA  
GATGACACTCGGGGTCCCCCGGATGGTGGGGGCTCCCTGGATCAGCTTCCCGGTGTTGGG  
GTTACACACCAGCACTCCCCACGCTGCCCGTTACAGACATCTTGCACTGTTGAGGTTG  
TACAGGCCATGCTTGTACAGTTG

11778.1.contig

GGGTTGGAGGGACTGGTCTTTATTTCAAAAAGACACTTGTCATATTCAGTATCAAAACA  
GTTGCACTATTGATTCTCTTCTCCCAATCGGCCCCAAAGAGACCACATAAAAGGAGAGT  
ACATTTTAAGCCAATAAGCTGCAGGATGTACACCTAACAGACCTCTAGAAACCTTACCAG  
AAAAATGGGGACTGGGTAGGGAAGGAACTTAAAGATCAACAACTGCCAGCCACGGA  
CTGCAGAGGCTGTACAGCCAGATGGGGTGGCCAGGGTGCCACAAACCCAAAGCAAAAGTT  
TCAAAATAATATAAAATTTAAAAAGTTTTGTACATAAGCTATTCAAGATTTCTCCAGCACT  
GACTGATACAAAGCACAATTGAGATGGCACTTCTAGAGACAGCAGCTTCAAACCCAGAAA  
AGGGTGATGAGATGAGTTTACATGGCTAAATCAGTGGCAAAAACACAGTCTTCTTTCTTT  
CTTTCTTTCAAGGAGGCAGGAAAGCAATTAAGTGGTCACCTCAACATAAGGGGGACATGA  
TCCATTCTGTAAGCAGTTGTGAAGGGG

11778-2&30-2

CAGGAACCGGAGCGCGAGCAGTAGCTGGGTGGGCACCATGGCTGGGATCACCACCATCGA  
GGCGGTGAAGCGCAAGATCCAGGTTCTGCAGCAGCAGGCAGATGATGCAGAGGAGCGAG  
CTGAGCGCCTCCAGCGAGAAGTTGAGGGAGAAAGCGGGCCCGGAACAGGCTGAGGCT  
GAGGTGGCCTCCTTGAACCGTAGGATCCAGCTGGTTGAAGAAGAGCTGGACCGTGCTCAG  
GAGCGCCTGGCCACTGCCCTGCAAAAGCTGGAAGAAGCTGAAAAAGCTGCTGATGAGAGT  
GAGAGAGGTATGAAGGTTATTGAAAACCGGCCCTTAAAGATGAAGAAAAGATGGAACCT  
CCAGGAAATCCAACCTAAAGAAGCTAAGCACATTGCAGAAAGGCAGATAGGAAGTATG  
AAGAGGTGGCTCGTAAGTTGGTGATCATTGAAGGAGACTTGGAAACGCACAGAGGAACGAG  
CTGAGCTGGCAGAGTCCCGTTGCCGAGAGATGGATGAGCAGATTAGACTGATGGACCAGA  
ACCTGAAGTGTCTGAGTGC

FIG. 15G



11782.1.contig

ATCTACGTCATCAATCAGGCTGGAGACACCATGTTCAATCGAGCTAAGCTGCTCAATATTG  
GCTTTCAAGAGGCCCTTGAAGGACTATGATTACAACTGCTTTGTGTTCAAGTGATGTGGACCT  
CATTCCGATGGACGACCGTAATGCCTACAGGTGTTTTCCAGCCACGGCACATTTCTGTT  
GCAATGGACAAGTTCGGGTTTAGCCTGCCATATGTTCAAGTATTTGGAGGTGCTCTGCTCT  
CAGTAAACAACAGTTTCTTGCCATCAATGGATTCCCTAATAATTATTGGGGTTGGGGAGGA  
GAAGATGACGACATTTTAAACAGATTAGTTCATAAAGGCATGCTATATCACGTCCAAATG  
CTGTAGTAGGGAGGTGTCGAATGATCCGGCATTCAAGAGACAAGAAAAATGAGCCCAATC  
CTCAGAGGTTTGACCGATCGCACATACAAAGGAAACGATGCGCTTCGATGGTTTGAACCT  
CACTTACCTACAAGGTGTTGGATGTCAGAGATACCCGTTATATACCCAAATCAC

11782.2.contig

CTAGACCTCTAATTAAGGACACAATCATGCTGGAGAATGAACAGTCTGACCCCGAGGGC  
CACAGCGAATTTAGGGAAGGAGGCAAAGAGGTGAGAAGGAAAGGAAAGAAGGAAGG  
AAGGAGACAATAAGAACTGGAGACGTTGGGTGGGTGAGGAGTGTGGTGGAGGCTCGG  
AGAGATGGTAAACAACTGACTGCTATGAGTTTCAACCCCATAGTCTAGGGCCATGAG  
GGCGTCAGTTCTTGGTGGCTGAGGGTCTTCCACCCAGCCCACTGGGGGAGTGGAGTGG  
GGAGTTCTGCCAGGTAAGCAGATGTTGTCTCCAAGTCTGACCCAGATGCTCTGGCAGGA  
TAACGCTGACCTGTTCCCTCAACAAGGGACCTGAAAGTAATTTTGTCTTTAC

11783-1 & 2

CCGAATTCAGCGTCAACGATCCYTCCCTTACCATCAAATCAATTGGCCACCAATGGTACT  
GAACCTACGAGTACACCGACTACGGCGGACTAATCTTCAACTCCTACATACTTCCCCAT  
TATTCCTAGAACCGGACCTGCGACTCCTTGACGTTGACAATCGAGTAGTACTCCCGAT  
TGAAGCCCCATTTCGTATAATAATTACATCACAAGACGCTTGCACTCATGAGCTGTCCCC  
ACATTAGGCTTAAAAACAGATGCAATTCCTGGACGCTAAGCCAAACCACTTTCACCGCTA  
CACGACCGGGGTATACTACGGTCAATGCTCTGAAATCTGTGGAGCAAACCAAGTTTCAT  
GCCCATCGTCTAGAAATTAATTCCTTAAAAATCTTTGAAATAGGGCCCGTATTTACCTA  
TAGCACCCCTCTACCCCTCTAG

11786.1.contig

GCTCTTACACTTTTATTGTTAATCTCTTCACATGGCAGATACAGAGCTGTCGTCTTGAAG  
ACCACCACTGACCAGGAAATGCCACTTTTACAAAATCATCCCCCTTTTCATGATTGGAAC  
AGTTTTCCTGACCGTCTGGGAGCGTTGAAGGGTGACCAGCACATTTGCACATGCAAAAAA  
GGAGTGACCCCAAGGCCTCAACCACACTTCCCAGAGCTACCATGGGCTGCAGGTGACTT  
GCCAGGTTTGGGGTTCGTGAGCTTTCTTGTGCTGCGGTGGGGAGGCCCTCAAGAACTGA  
GAGGCCGGGGTATGCTTCATGAGTGTTAACATTACGGGACAAAAGCGCATCATTAGGAT  
AAGGAACAGCCACAGCACTTCATGCTTGTGAGGGTTAGCTGTAGGAGCGGGTGAAGGAT  
TCCAGTTTATGAAATTTAAAGCAAACAACGGTTTTTAGCTGGGTGGGAAACAGGAAAC  
TGATGTCGGCAATGACCACCATTTTCTGCCATGTGAAGGTCCCATGAAACC

FIG. 15H



11786.2.contig

CAAGCGCTTGGCGTTTGGACCCAGTTCAGTGAGGTTCTTGGGTTTTGTGCCTTGGGGATTT  
TGGTTTGACCCAGGGGTCAGCCTTAGGAAGGTCTTCAGGAGGAGGCCGAGTTCCCTTCAG  
TACCAACCCCTCTCTCCCACTTTCCTCTCCCGCAACATCTCTGGGAATCAACAGCATATT  
GACACGTTGGAGCCGAGCCTGAACATGCCCTCGGCCCCAGCACATGGAAAAACCCCTTC  
CTTGCCCTAAGGTGTCTGAGTTTCTGGCTCTTGAGGCAATTCAGACTTGAAATTCTCATCAG  
TCCATTGCTCTTGAGTCTTTGCAGAGAACCTCAGATCAGGTGCACCTGGGAGAAAGACTTT  
GTCCCACTTACAGATCTATCTCTCCCTTGGGAAGGGCAGGGAATGGGGACGGTGTATGG  
AGGGGAAGGGATCTCTGCGCCCTTCATTGCCACACTGGTGGGACCATGAACATCTTTAG  
TGCTGAGCTTCTCAAATTACTGCAATAGGA

13691.1&2

AGCGTCAAAATCAGAATGGAAAAGACTCAAAACCATCATCAACACCAAGATCAAAAGGAC  
AAGRATCCTTCAAGAAACAGGAAAAAATCCTAAAAACACCAAAAGGACCTAGTTCTGTAG  
AAGACATTAAAGCAAAAATGCAAGCAAGTATAGAAAAAGGTGGTTCTTCCCAAAGTGG  
AAGCCAAATTCATCAATTATGTGAAGAATTGCTTCCGGATGACTGACCAAGAGGCTATTCA  
AGATCTCTGGCAGTGGAGGAAGTCTCTTTAAGAAAATAGTTTAAACAATTTGTTAAAAAAT  
TTCCGTCTTATTTCAATTTCTGTAAACAGTTGATATCTGGCTGTCTTTTATAATGCAGAGT  
GAGAACTTTCCCTACCGTGTGTTGATAAATGTTGTCCAGGTCTATTGCCAAGAATGTGTGT  
CCAAAATGCCTGTTTAGTTTTAAAGATGGAATCCACCCCTTGTGGTTTTAAGTATGTA  
TGGAATGTTATGATAGGACATAGTAGCGGTGGTCAGACATGGAAATGGTGGGSMGAC  
AAAAATATACATGTGAAATAA

13692.1&2

TCCGAATTCGAAGCGAATTATGGACAAACGATTCTTTTAGAGGATTACTTTTTCAATTT  
GGTTTTAGTAATCTAGGCTTTGCCTGTAAAGAATACAACGATGGATTTTAAACTGTTTG  
TGGAATGTGTTTAAAGGATTGATTCTAGAACCTTTGTATATTTGATAGTATTTCTAACTTC  
ATTTCTTTACTGTTTGAGTTAATGTTTCATGTTCTGCTATGCAATCGTTTATATGCACGTTT  
TTTAAATTTTTAGATTTTCTGGATGTATAGTTTAAACAACAAAAAGTCTATTTAAACTG  
TAGCAGTAGTTTACAGTTCTAGCAAAGAGGAAAGTTGTGGGGTTAACTTTGTATTTCTT  
TCTTATAGAGGCTTCTAAAAAGGTATTTTATATGTTCTTTTAAACAAATATTGTGTACAAC  
CTTTAAACATCAATGTTTGGATCAAAACAAGACCCAGCTTATTTCTGC

13693.2

TGTGGTGGCGCGGGCTGAGGTGGAGGCCAGGACTCTGACCCTGCCCTGCCTTCAGCAA  
GGCCCCCGGCAGCGCCGCCACTACGAAGTCCCGTGGGTTGAAAAATATAGGCCAGTAAA  
GCTGAATGAAATTGTCGGGAATGAAGACACCGTGAGCAGGCTAGAGGTCTTTGCAAGGGA  
AGGAAATGTGCCAACATCATATTGCGGGCCCTCCAGGAACCGGCAAGACCACAAGCAT  
TCTGTGCTTGGCCCGGGCCCTGCTGGGCCAGCACTCAAAGATGCCATGTTGGAACCTAAT  
GCTTCAAATGACAGGGGCAATTGACGTTGTGAGGAATAAAATTTAAATGTTTGCTCAACAA  
AAAGTCACTCTTCCCAAAGGCCGACATAAGATCATCTTCTGGATGAAGCAGACAGCATG  
ACCGACGGAGCCAGCAAGCCTTGAGGAGAACCATGGAAATCTACTCTAAAACCACTCGT  
TCGCCCTTGCTTGAATGCTTCGGATAAGATCATCGAGCC



13696.1-13744.1

CTTTGCAAAGCTTTTATTTTCATGTCTGCGGCATGGAATCCACCTGCACATGGCATCTTAGCT  
GTGAAGGAGAAAGCAGTGCACGAGAAGGAATGAGTGGGCGGAACCAACGGCCTCCACAA  
GCTGCCTTCCAGCAGCCTGCCAAGGCCATGGCAGAGAGAGACTGCAAACAAACACAAGCA  
AACAGAGTCTCTTACAGCTGGAGTCTGAAAGCTCATAGTGGCA TGTGTGAATCTGACAA  
AATTAAGAGTGTGCATAGTCCATTACATGCATAAAACACTAATAATAATCCTGTTACACG  
TGA CTGCAGCAGGCAGGTCCAGCTCCACCCTGCCCTCCTGCCACATCACATCAAGTGCCA  
TGGTTTAGAGGGTTTTTCATATGTAATCTTTTATTCTGTAAGGTAACAAAATATACAG  
AACAAAACCTTCCCTTTTAAACTAATGTTACAAATCTGTATTATCACITGGATATAAAT  
AGTATATAAGCTGATC

13700.1

CAAGGGATATATGTTGAGGGTACRGRGTGACACTGAACAGATCACAAGCAGAGAAACA  
TTAGTTCTCTCCCTCCCAGCGTCTCCTTCGTCTCCCTGGTTTTCCGATGTCCACAGAGTGA  
GATTGTCCCTAAGTAACTGCATGATCAGAGTGTGKCTTTATAAGACTCTTCATTACGCGT  
ATCCAATTCAGCAATTGCTTCATCAAATGCCGTTTTTGGCAGGCTACAGGCCTTTTCAGGA  
GAGTTTAGAATCTCATAGTAAAAGACTGAGAAATTTAGTGCCAGACCAAGACGAATTGGG  
TGTGTAGGCTGCATTNCTTTCTTACTAATTTCAAATGCTTCCTGGTAAGCCTGCTGGGAGTT  
CGACACAAGTGGTTTGTGTTGCTCCAGATGCCACTTCAGAAAGATACCTAAAAATAATCT  
CCTTTCATTTTCAAAGTAGAACAC

13700.2

TCCGGAGCCGGGGTAGTCGCCGCCGCCGCCGGTGCAGCCACTGCAGGCACCGCTGCC  
GCCGCTGAGTAGTGGGCTTAGGAAGGAAGAGGTCATCTCGCTCGGAGCTTCGCTCGGAA  
GGGTCTTTGTTCCCTGCAGCCCTCCACGGGAATGACAATGGATAAAAGTGAGCTGGTACA  
GAAAGCCAACTCGCTGAGCAGGCTGAGCGATATGATGATATGGCTGCAGCCATGAAGGC  
AGTCACAGAACAGGGGCATGAACTCTCCAACGAAGAGAGAAATCTGCTCTCTGTTGCCTA  
CAAGAAATGTGGTAAGGCCGCCGCCGCTCTTCCTGGCGTGTATCTCCAGCATTGAGCAGA  
AAACAGAGAGGAATGAGAAGAAGCAGCAGATGGGCAAAGAGTACCGTGAGAAGATAGA  
GGCAGAACTGCAGGACATCTGCAATGATGTTCTGGAGCTTGTGGACAAATATCTTATTCC  
AATGCTACACAACCCAGAAA

13701.1

AAAAAGCAGCARGTTCAACACAAAATAGAAATCTCAAATGTAGGATAGAAACAAAACAA  
GTGTGTGAGGGGGGAAGCAACAGCAAAAGGAAGAAATGAGATGTTGCAAAAAGATGGA  
GGAGGGTTCCCTCTCCTCTGGGGACTGACTCAAACTGATGTGGCAGTATACACCATTC  
CAGAGTCAGGGGTGTTCAATCTTTTGGGAGTAAGAAAAGGTGGGGATTAAGAAGACGT  
TTCTGGAGGCTTAGGGACCAAGGCTGGTCTCTTCCCCCTCCCAACCCCTTGATCCCTTT  
CTCTGATCAGGGGAAAGGAGCTCGAATGAGGGAGGTAGAGTTGGAAAGGGAAAGGATTC  
CACTTGACAGAATGGGACAGACTCCTTCCCA

FIG. 15J



13701.2

TGGCAATAGCACAGCCATCCAGGAGCTCTTCARGCGCATCTCGGAGCAGTTCACTGCCATG  
TTCCGCGGAAGGCCCTTCCTCCACTGGTACACAGGCGAGGGCATGGACGAGATGGAGTTC  
ACCGAGGCTGAGAGCAACATGAACGACCTCGTCTCTGAGTATCAAGCAGTACCAGGATGC  
CACCGCAGAAGAGGAGGAGGATTTCCGTGAGGAGGCCGAAGAGGAAGCCCTAAGGCAGAG  
CCCCATCACCTCAGGCTTCTCAGTTCCCTTAGCCGTCTTACTCAACTGCCCTTTCCTCTCC  
CTCAGAATTTGTGTTTGTCTGCCTCTATCTGTTTTTGTGTTTTCTTCTGGGGGGTCTAGAA  
CAGTGCCCTGGCACATAGTAGGCGCTCAATAAATACTTGGTTGNTGAATGTCTCCT

13702.2

AGCTGGCGCTAGGGCTCGGTTGTGAAATACAGCGTRGTCAGCCCTTGCGCTCAGTGTAGAA  
ACCCACGCTGTAAGGTCGGTCTTCGTCCATCTGCTTTTTCTGAAATACACTAAGAGCAG  
CCACAAAAGTAACTCAAGGAAACCATAAAGCTTGGAGTGCCTTAATTTTAACCAAGTT  
TCCAATAAACGGTTTACTACCT

13704.2-13740.2

GGAGATGAAGATGAGGAAGCTGAGTCAGCTACGGGCARGCGGCAGCTGAAGATGATGA  
GGATGACGATGTCGATACCAAGAAGCAGAAGACCGACGAGGATGACTAGACAGCAAAAA  
AGGAAAAGTTAAA

13706.1

GATGAAAATTAATACTTAAATTAATCAAAAGGCACTACGATACCACCTAAACCTACTG  
CCTCAGTGGCAGTAKGCTAAKGAAGATCAAGCTACAGSACATYATCTAATATGAATGTTA  
GCAATTACATAKCARGAAGCATGTTTGCTTTCCAGAAGACTATGGNACAATGGTCATTWG  
GGCCCAAGAGGATATTTGGCCNGGAAAGGATCAAGATAGATNAANGTAAAG

13706.2

GAGTAGCAACGCAAAGCGCTTGGTATTGAGTCTGTGGGSGACTTCGGTTCCGGTCTCTGCA  
GCAGCCGTGATCGCTTAGTGGAGTGCTTAGGGTAGTTGGCCAGGATGCCGAATATCAAAA  
TCTTCAGCAGGCAGCTCCACCAAGGACTTATCTCASAAAATTGCTGACCGCTGGGCCTGG  
AGCTAGGCAAGGTGGTGACTAAGAAATTCAGCAACCAGGAGACCTGTGTGGAAATTGGTG  
AAAGTGTAACCGTGGAGAGGATGTCTACATTGTTTCAGAGTGGNTGTGGCGAAATCAATGAC  
AATTTAATGGAGCTTTTGATCATGATTAATGCCTGCAAGATTGCTTCAGCCAGCCGGGTTA  
CTGCAGTCATCCCATGCTTCCCTTATGCCCCGGCAGGATAAGAAAGATNAGAGCCGGGCC  
GCCAATCTCAGCCAAGCTTGGTGCAAAATATGCTATCTGTAGCAGTGCAGATCATATTATCA  
CCATGGACCTACATGCTTCTCAAATTCANGGCTTTTT

FIG. 15K



13707.3

ATGCAAAAGGGGACACAGGGGGTTCAAAAATAAAAATTTCTCTTCCCCCTCCCCAAACCT  
GTACCCAGCTCCCCGACCACAACCCCTTCTCCCCGGGAAAGCAAGAAGGAGCAGG  
TGTGCGCATCTGCAGCTGGGAAGAGAGAGGCCGGGGAGGTGCCGAGCTCGGTGCTGGTCTC  
TTTCCAAATATAAATACGTGTGTGTCAGAACTGGAAAATCTCCAGCACCCACCACCCAAGCA  
CTCTCCGTTTCTGCCGGTGTGTTGGAGAGGGGCGGNGGGCAGGGGCGCCAGGCACCGGCT  
GGCTGCGGTCTACTGCATCCGCTGGGTGTGCACCCCGCA

13710.2

AGGTTGGAGAAGGTCTATGCAGGTGCAGATTGTCCAGGSKCAGCCACAGGGTCAAGCCAA  
CAGGCCCAGAGTGGCACTGGACAGACCTGCAGGTGATGCAGCAGATCATCTAACACA  
GGAGAGATCCAGCAGATCCCGGTGCAGCTGAATGCCGGCCAGCTGCAGTATATCCGCTTA  
GCCCAGCCTGTATCAGGCACTCAAGTTGTGCAGGGACAGATCCAGACACTTGCCACCAAT  
GCTCAACAGATTACACAGACAGAGGTCCAGCAAGGACAGCAGCAGTTCAAGCCAGTTCAC  
AAGATGGACAGCAGCTCTACCAGATCCAGCAAGTCACCATGCCTGCGGGGCCANGACCTCG  
CCAGCCCATGTTTCATCCAGTCAAGCCAACAGCCCTTCNACGGGCAGGCCCCCAGGTGAC  
CGGCGACTGAAGGGCCTGAGCTGGCAAGGCCAANGACACCCAACACAATTTTGCATAC  
AGCCCCCAGGCAATGGGCACAGCCTTCTTCCAGAGGAC

13710-1

TGAGATTTATTGCATTTTCATGCAGCTTGAAGTCCATGCAAAGGRGACTAGCACAGTTTTTA  
ATGCATTTAAAAATAAAAGGGAGGTGGGCAGCAAACACACAAAGTCCTAGTTTCCTGGG  
TCCCTGGGAGAAAAGAGTGTGCAATGAATCCACCCACTCTCCACAGGGAATAATCTGT  
CTCTTAAATGCAAAGAATGTTTCCATGGCCTCTGGATGCAAAATACACAGAGCTCTGGGGTC  
AGAGCAAGGGATGGGGAGAGGACCAGAGTGA AAAAGCAGCTACACACATTCACCTAAT  
TCCATCTGAGGGCAAGAACAACGTGGCAAGTCTTGGGGGTAGCAGCTGTT

13711.1

TCCAGACATGCTCCTGTCTTAGGCGGGGAGCAGGAACCAGACCTGCTATGGGAAGCAGAA  
AGAGTTAAGGGAAGGTTTCCTTTCAITCCTGTTCTTCTCTTTTGCTTTTGAACAGTTTTTA  
AATATACTAATAGCTAAGTCATTTGCCAGCCAGGTCCCGGTGAACAGTAGAGAAACAAGGA  
GCTTGCTAAGAATTAATTTTGCTGTTTTTCACCCCATTCAAACAGAGCTGCCCTGTTCCCTG  
ATGGAGTTCCATTCTGCGCAGGGCACGCTGAGTAACACGAAGCCATTCAAGAAAGGCGG  
GTGTGAAATCACTGCCACCCCATGGACAGACCCCTCACTCTTCTTCTTAGCCGAGCGCT  
ACTTAATAAATATATTTTACTTTGAAATTATGATAACCGATTTTCCCATGCGGCATCCTA  
AGGGCACTTGCCAGCTCTTATCCGGACAGTCAAGCACTGTGTTGGACAACAGATAAAGG  
AAAAGAAAAAGAAGAAAACAACCGCAACTTCTGT

FIG. 15L



13711.2

TGAGACGGACCACTGGCCTGGTCCCCCTCATKGTGCTGTCGTAGGACCTGACATGAAACGC  
AGATCTAGTGGCAGAGAGGAAGATGATGAGGAACCTCTGAGACGTCGGCAGCTTCAAGAA  
GAGCAATTAATGAAGCTTAACTCAGGCCTGGGACAGTTGATCTTGAAAGAAGAGATGGAG  
AAAGAGAGCCGGGAAAGGTCATCTCTGTTAGCCAGTCGCTACGATTCTCCCATCACTCAG  
CTTCACATATTCATCATCTAAACTGCATCTCTCCCTGGCTATGGAAGAAATGGGCTTCA  
CCGGCCTGTTTCTACCGACTTCGCTCAGTATAACAGCTATGGGGATGTCAGCGGGGAGTG  
CGAGATTACCAGACACTTCCAGATGGCCACATGCCTGCAATGAGAATGGACCGAGGAGTG  
TCTATGCCCAACATGTTGGAACCAAGATAITTCATATGAAATGCTCATGGTGACCAACA  
GAGGGCCGAAACCAATCTCAGAGAGGTGGACAGAA

13713.1&2

TCACITTTATTTTCTTGTATAAAAAACCCTATGTTGTAGCCACAGCTGGAGCCTGAGTCCGCT  
GCACGGAGACTCTGGTGTGGGTCTTGACGAGGTGGTCAGTGAACCTCTGATAGGGAGACT  
TGGTGAATACAGTCTCCTTCCAGAGGTTCGGGGTCAGGTAGCTGAGGTCTTAGAAATGGC  
ATCAAAGGTGGCCTTGGCGAAGTTGCCAGGGTGGCAGTGCAGCCCCGGGCTGAGGTGTA  
GCAGTCATCGATACCAGCCATCATGAG

13715.4

CTGGAATATAGACCCGTGATCGACAAAACTTTGAACGAGGCTGACTGTGCCACCGTCCCGC  
CAGCCATTGCTCCTACTGATGAGACAAGATGTGGTGTGACAGAATCAGCTTTTGTAAAT  
ATGTATAATAGCTCATGCATGTGTCCATGTCATAACTGTCTTCATACGCTTCTGCACTCTGG  
GGAAGAAGGAGTACATTGAAGGGAGATTGGCACCTAGTGGCTGGGAGCTTGCAGGAACC  
CAGTGGCCAGGGAGCGTGGCACTTACCTTTGTCCCTTGCTTCATTCTTGTGAGATGATAAA  
ACTGGGCACAGCTCTTAAATAAAATATAAATGAACA

13717.1&2

TGAATGGGGAGGAGCTGACCCAGGAAATGGAGCTTGNGGAGACCAGGCCTGCAGGGGAT  
GGAACCTTCCAGAAGTGGGCATCTGTGGTGGTGCCTCTTGGGAAGGAGCAGAAGTACACA  
TGCCATGTGGAACATGAGGGGCTGCCTGAGCCCTCACCTGAGATGGGGCAAGGAGGAG  
CCTCCTTCAACCAAGACTAACACAGTAATCAATTGCTGTTCCGGTTGCTTGGAGCTGT  
GGTCATCCTTGGAGCTGTGATGGCTTTTGTGATGAAGAGGAGGAGAAACACAGGTGAAAA  
AGGAGGGGACTATGCTCTGGCTCCAGGCTCCAGAGCTCTGATATGTCTCTCCAGATTGT  
AAAGTGTGAAGACAGCTGCCTGGTGTGGACTTGGTGACAGACAATGTCTTCACACATCTCC  
TGTGACATCCAGAGACCTCAGTTCTCTTTAGTCAAGTGTCTGATGTTCCCTGTGAGTCTGCG  
GGCTCAAAGTGAAGAACTGTGGAGCCAGTCCACCCCTGCACACCAGGACCCTATCCCTG  
CACTGCCCTGTGTTCCCTTCCACAGCCAACCTTGTGCTCCAGCCAACATTGGTGGACAT  
CTGCAGCCTGTCAGCTCCATGCTACCCTGACCTTCAACTCCTCACTTCCACACTGAGAATA  
ATAATTTGAATGTGGGTGGCTGGAGAGATGGCTCAGCGCTGACTGCTCTTCAAAGGTCTCT  
GAGTTCAAATCCCAGCAACCACATGGTGGCTCACAACCATCTGTAATGGGATCTAATACCC  
TCTTCTGAGTGTCTGAAGACASCTACAGTGTACTTACATATAATAATAAATAAG

FIG. 15M



13719.1&2  
13721.1  
13721.2  
13723.1

13719.1&2

GGCCGGGCGCGCGCGCCCCGCCACACGCGCGCGCGTGCAGTTTATAAAGGGAGAG  
AGCAAGCAGCGAGTCTTGAAGCTCTGTTTGGTGCTTTGGATCCATTTCCATCGGTCTTAC  
AGCCGCTCGTCAGACTCCAGCAGCCAAGATGGTGAAGCAGATCGAGAGCAAGACTGCTTT  
TCAGGAAGCCTTGGACGCTGCAGGTGATAAACTTGTAGTAGTTGACTTCTCAGCCAGTGG  
TGTGGGCCTTGCAAAATGATCAAGCCTTTCTTTCAATCCCTCTCTGAAAAGTATTCCAACGT  
GATATTCTTGAAGTAGATGTGGATGACTGTGAGGATGTGTCTCAGAGTGTGAAGTCAAA  
TGCATGCCAACATTCCAGTTTTTTAAGAAGGGACAAAAGGTGGGTGAATTTTCTGGAGCCA  
ATAAGGAAAAGCTTGAAGCCACCATTAAATGAATTAGTCTAATCATGTTTTCTGAAAATATA  
ACCAGCATTGGCTATTTAAACTTGTAAATTTTTTTAATTACAAAATATAAAATATGAA  
GACATAAACCCMGTTGCCATCTGCGTGACAATAAACATTAATGCTAACACTT

13721.1

TCACATAAGAAATTTAAGCAAGTTACRCTATCTTAAAAACACAACGAATGCATTTTAATA  
GAGAAACCTTCCCTCCCTCCACCTCCCTCCCCACCCTCCTCATGAATTAAGAATCTAAG  
AGAAGAAGTAACCATAAAACCAAGTTTTGTGGAATCCATCATCCAGAGTGCTTACATGGT  
GATTAGGTAAATATTGCCTTCTTACAAAATTTCTATTTTAAAAAAAATTATAACCTTGATTG  
CTTATTACAAAAAATTCAGTACAAAAGTTCAATATAATTGAAAAATGCTTTTCCCTCCCT  
CACAGCACCGTTTTATATATAGCAGAGAAATGAAGAGATTGCTAGTCTAGATGGGGCA  
ATCTTCAAAATACACCAAGACGCACAGTGGTTTTTTACCCTCCCTTCTCATAAG

13721.2

GGAAAGGATTCAAGAATTAGAGGACTTGCTTGCTRRAGAAAAAGACAACCTCTCGTCGCAT  
GCTGACAGACAAAGAGAGAGAGATGGCGGAAATAAGGGATCAAAATGCAGCAACAGCTGA  
ATGACTATGAACAGCTTCTTGATGTAAAGTTAGCCCTGGACATGGAAATCAGTGCTTACAG  
GAAACTCTTAGAAGGCGAAGAAGAGAGAGTTGAAGCTGTCTCCAAGCCCTTCTTCCCGTGT  
GACAGTATCCCGAGCATCCTCAAGTCGTAGTGTACCGTACAACCTAGAGGAAAGCGGAAGA  
GGGTGATGTGGAAGAATCAGAGGCGAAGTAGTAGTGTAGCATCTCTCATTCCGCTCAA  
CCACTGGAATGTTTGCATCGAAGAAATTGATGTTGATGGGAAATTATCCCGCTTGAAGA  
ACACTTCTGAACAGGATCAACCAATGGGAAGGCTTGGGAGATGATCAGAAAAATTGGAGA  
CACATCAGTCAGTTATAAATATACCTCAA

13723.1

CATGGGTTTACCAGGTTGGCCAGGCTGCTCTTGAACCTCTGACCTCAGGTGATCCACCCG  
CCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACCACGCCCGGCCCCCAAAGC  
TGTTTCTTTTGTCTTTAGCGTAAAGCTCTCCTGCCATGCAGTATCTACATAACTGACGTGAC  
TGCCAGCAAGCTCAGTCACTCCGTGGTCTTTTCTCTTTCCAGTTCTTCTCTCTCTTCAAG  
TTCTGCCTCAGTGAAAGCTGCAGGTCCCCAGTTAAGTGATCAGGTGAGGGTTCTTTGAACC  
TGGTTCTATCAGTCGAATTAATCCTTCATGATGG

FIG. 15N



13723.2

GATGTGTTGGACCCTCTGTGTCAAAAAAACCTCACAAGAATCCCCTGCTCATTACAGAA  
GAAGATGCATTTAAATATGGGTTATTTCAACTTTTATCTGAGGACAAGTATCCATTAA  
TTATTGTGTCAGAAGAGATTGAATACCTGCTTAAGAAGCTTACAGAAGCTATGGGAGGAG  
GTTGGCAGCAAGAACAATTTGAACATTATAAAATCAACTTIGATGACAGTAAAAATGGCC  
TTTCTGCATGGGAACCTATTGAGCTTATTGGAATGGACAGTTTAGCAAAGGCATGGACCG  
GCAGACTGTGTCTATGGCAATTAATGAAGTCTTTAATGAAGTTATATTAGATGTGTTAAAG  
CAGGGTTACATGATGAAAAAGGGCCACAGACGGAAAACTGGACTGAAAGATGGTTTGTA  
CTAAACCCCAACATAATTTCTTACTATGTGAGTGAGGATCTGAAGGATAAGAAAGGAGAC  
ATTCTCTGGATGAAAAATGCTGTGTAGAAGTCCTTGCCTGACAAAAGATGGAAAGAAAT  
GCCTTTT

13725.1

GACTGGTTCTTTATTTCAAAAAGACACTTGTCAATATTCAGTRTCAAAACAGTTGCACTATT  
GATTTCTCTTTCTCCCAATCGGCCCCAAAGAGACCACATAAAAGGAGAGTACATTTTAAGC  
CAATAAGCTGCAGGATGTACACCTAACAGACCTCCTAGAAACCTTACCAGAAAAATGGGGA  
CTGGGTAGGGAAGGAACTTAAAGATCAACAACTGCCAGCCACGGACTGCAGAGGCT  
GTCACAGCCAGATGGGGTGGCCAGGGTGCCACAAACCCAAAGCAAAGTTTCAAAATAATA  
TAAATTTAAAAAGTTTTGTACATAAGCTATTCAAGATTCTCCAGCACTGACTGATACAA  
AGCACAATTGAGATGGCACTTCTAGAGACAGCAGCTTCAAACCCAGAAAAGGGTGATGAG  
ATGAAGTTTCACATGGCTAAATCAGTGGCAAAAACACAGTCTTCTTTCTTTCTTTCAA  
GGANGCAGGAAAGCAATTAAGTGGTCACCTTAACATAAGGGGGAC

13725.2

TGGGTGGGCACCATGGCTGGGATCACCACCATCGAGGCGGTGAAGCGCAAGATCCAGGTT  
CTGCAGCAGCAGGCAGATGATGTCAGAGGAGCGAGCTGAGCGCCTCCAGCGAGAAGTTGA  
GGGAGAAAGGCGGGCCCGGAACAGGCTGAGGCTGAGGTGGCCTCCTTGAACCGTAGGA  
TCCAGCTGGTTGAAGAAGAGCTGGACCGTGCTCAGGAGCGCCTGGCCACTGCCCTGCAAA  
AGCTGGAAGAAGCTGAAAAAGCTGCTGATGAGAGTGAGAGAGGTATGAAGGTTATTGAA  
AACCGGGCCTTAAAGATGAAGAAAAGATGGAATCCAGGAAATCCAATCAAGAAGC  
TAAGCACATTGCAGAAGAGGCAGATAGGAAGTATGAAGAGGTGGCTCGTAAGTTGGTGAT  
CATTGAAGGAGACTTGGAACCGCACAGAAGGAACGAGCTTGAGCTTGGCAAAAGTCCCGT  
TGCCAGAGATGGGATGAACCAGATTAGACTGATGGACCANAACC

13726.1&2

AGGGGCGCGGGTGCGTGGGCCACTGGGTGACCGACTTAGCCTGGCCAGACTCTCAGCAC  
CTGGAAGCGCCCCGAGAGTGACAGCGTGAGGCTGGGAGGAGGACTTGGCTTGAGCTTGT  
TAAACTCTGCTCTGAGCCTCCTTGTCGCCTGCATTTAGATGGCTCCCGCAAAGAAGGGTGG  
CGAGAAGAAAAAGGGCCGTTCTGCCATCAACGAAGTGGTAACCCGAGAATACACCATCAA  
CATTACAAGCGCATCCATGGAGTGGGCTTCAAGAAGCGTGACCTCGGGCACTCAAAGA  
GATTTCGGAATTTGCCATGAAGGAGATGGGAACTCCAGATGTGCGCATTGACACCAGGCT  
CAACAAAGCTGTCTGGGCCAAAGGAATAAGGAATGTGCCATACCGAATCCGGTGTGCGGC  
TGTCAGAAAAACGTAATGAGGATGAAGATTACCAAATAAGCTATATACTTTGGTTACCTA  
TGTAACCTGTACCACTTTCAAAAATCTACAGACAGTCAATGTGGATGAGAACTAATCGCTG  
ATCGTCAGATCAAATAAAGTTATAAAAT

FIG. 150



13727.1

TCGGGAGCCACACTTGGCCCTCTTCTCTCCAAAGSGCCAGAACCTCCTTCTTTGGAGAA  
TGGGAGGGCCTCTTGGAGACACAGAGGGTTTCACCTTGGATGACCTCTAGAGAAAATTGCC  
CAAGAAGCCCACCTTCTGGTCCCAACCTGCAGACCCACAGCAGTCAGTTGGTCAGGCCCT  
GCTGTAGAAGGTCACTTGGCTCCATTGCCTGCTTCCAACCAATGGGAGGAGAGAAGGCC  
TTTATTTCTCGCCACCCATTCTCTGTACCAGCACCTCCGTTTTCAGTCAGTGTGTCCA  
GCAACGGTACCGTTTACACAGTCACCTCAGACACACCATTTACCTCCCTTGCCAAGCTGT  
TAGCCTTAGAGTGATTGCAGTGAACACTGTTACACACCGTGAATCCATCCCATCAGTCC  
ATTCCAGTTGGCACCAGCCTGAACCATTTGGTACCTGGTGTTAACTGGAGTCCTGTTTACA  
AGGTGGAGTCGGGGCTTGCTGACTTCTTTCATTTGAGGGCAC

13727.2

ACCTAGACAGAAGGTGGGTGAGGGAGGACTGGTAGGAGGCTGAGGCAATTCCTTGGTAGT  
TTGTCTGAAACCTACTGGAGAAGTCAGCATGAGGCACCTACTGAGAGAAGTGCCACAGA  
AACTGCTGACTGCATCTGTTAAGAGTTAACAGTAAAGAGGTAGAAGTGTGTTTCTGAATCA  
GAGTGAAGCGTCTCAAGGGTCCCACAGTGGAGGTCCCTGAGCTACCTCCCTTCCGTGAGT  
GGGAAGAGTGAAGCCCATGAAGAACTGAGATGAAGCAAGGATGGGGTTCTTGGGCTCCA  
GGCAAGGGCTGTGCTCTCTGCAGCAGGGAGCCCCACGAGTCAGAAGAAAAGAACTAATCA  
TTTGTGCAAGAAACCTTGCCCGGATACTAGCGGAAAACCTGGAGGCGGNGGTGGGGGCAC  
AGGAAAGTGGAAGTGATTGATGGAGAGCAGAGAAACCTATGCACAGTGGCCGAGTCCAC  
TTGTAAAGTG

13728.1&2

TTCAAGCAATTGTAACAAGTATATGTAGATTAGAGTGAGCAAAATCATATACAATTTTCAT  
TTCCAGTTGCTATTTTCCAAATTTGTTCTGTAATGTCGTTAAAAATTACTTAAAAATTAACAAA  
GCCAAAAATTATTTATGACAAGAAAGCCATCCCTACATTAATCTTACTTTTCCACTCAC  
CGGCCCATCTCCTTCTCTTTTCTTAACCTATGCCATTAATACTGTTCTACTGGGCGGGCG  
TGTGGCTCATGCCTGTAATCCCAGCATTTTGGGAGGCCAAGGCAGGCGGATCATGAGGTC  
AAGAGATTGAGACCATCCTGGCCAACATGGTGAAACCCCGCCTCGACTAAGAATACAAAA  
ATTAGCTGGGCATGGTGGCGCATGCCTGTAGTCTCAGCTACTCGGGAGGCTGAGGCAGAA  
GAATCGCTTGAACCCGGGAGGCAGAGGATGCAGTGAGCCCCGATCGCGCCACTGCACTCT  
AGCTGGGGCAGAGACTGAGACTCTGCTC

13731.1&2

TGTGCCAGTCTACAGGCCTATCAGCAGCGACTCCTTCAGCAACAGATGGGGTCCCCGTGTC  
AGCCCAACCCCATGAGCCCCCAGCAGCATATGCTCCCAATCAGGCCCAGTCCCCACACCT  
ACAAGGCCAGCAGATCCCTAATTCTCTCTCCAATCAAGTGCGCTCTCCCCAGCCTGTCCCTT  
CTCCACGGCCACAGTCCCAGCCCCCCTCCAGTCCTTCCCCAAGGATGCAGCCTCAGCC  
TTCTCCACACCAGTTTCCCCACAGACAAGTTCCCCACATCCTGGACTGGTAGTTGCCACG  
GCCAACCCCATGGAACAAGGGCATTGTCAGCC

FIG. 15P



13734.1&2

TGTA AAAA CT TGT TTTA ATTTT GTATA AAAATAA AGGTGGTCCATGCCACGGGGGCTGTA  
GGAAATCCAAGCAGACCAGCTGGGGTGGGGGGATGTAGCCTACCTCGGGGACTGTCTGT  
CCTCAAAACGGGCTGAGAAGGCCCGTCAGGGGCCAGGTCCACAGAGAGGCTGGGATA  
CTCCCCAACCCGAGGGGCAGACTGGGCAGTGGGAGCCCCATCGTCCCCAGAGGTGG  
CCACAGGCTGAAGGAGGGGCTGAGGCACCGCAGCCTGCAACCCCCAGGGCTGCAGTCCA  
CTAACTTTTTACAGAAATAAAGGAACATGGGGATGGGGA AAAAGCACCAGGT CAGGCA  
GGGCCCAGGGCCCCAGATCCCAGGAGGGCCAGGACTCAGGATGCCAGCACCACCCTAGC  
AGTCCCACAGCTCCTGGCACAGGAGGCCGCCACGGATTGGCACAGGCCGCTGCTGGCCA  
TCACGCCACATTTGGAGAACTTGTC CCGACAGAGGT CAGCTCGGAGGAGCTCCTCGTGGGC  
ACACACTGTACGAACACAGATCTCCTTGTTAATGACGTACACACGGCGGAGGCTGCGGGG  
ACAGGGCACGGGAGGTCTCAGCCCCACTT

13736.2

ATGGCTGCTGGATTAGGTGGTAATAGGGGCTGTGGGCCATAAATCTGAAGCCTTGAGAA  
CCTTGGGTCTGGAGAGCCATGAAGAGGGAAGGAAAAGAGGGCAAGTCTGAACCTAACC  
AATGACCTGATGGATTGCTCGACCAAGACACAGAAAGTGAAGTCTGTGTCTGTGCACTTCCC  
ACAGACTGGAGTTTTTGGTGTCTGAATAGAGCCAGTTGCTAAAAAATTGGGGGTTTGGTGA  
AGAAATCTGATTGTTGTGTGTATTCAATGTGTGATTTAAAAATAAACAGCAACAACAATA  
AAAACCTGACTGGCTGTTTTTCCCTGTATTCTTTACAACTATTTTTGACCCTCTGAAAA  
TTATTATACTTCACCTAAATGGAAGACTGCTGTGTTGTGGAAATTTGTAAATTTTAAATT  
TATTTTATTCTCTCTCTCTTTTATTTTGCCTGCAGAATCCGTTGAGAGACTAATAAGGCTTA  
ATATTTAATTGATTGTTTAATATGTATATAAAT

13744.2-13696.2

GGCATGCGAGCGCACTCGGCGGACGCAAGGGCGGCGGGAGCACAGGAGCACTGCAGG  
CGCGGGTTGGGACAGCGTCTTCGCTGCTGCTGGATAGTCGTGTTTTCGGGGATCGAGGAT  
ACTCACCAGAAACCGAAATGCCGAAACCAATCAATGTCCGAGTTACCACCATGGATGCA  
GAGCTGGAGTTTGCAATCCAGCCAAATACA ACTGGAAAACAGCTTTTTGATCAGGTGGTA  
AAGACTATCGGCCTCCGGGAAGTGTGGTACTTTGGCCTCCACTATGTGGATAATAAAGGAT  
TTCTACCTGGCTGAAGCTGGATAAGAAGGTGTCTGCCAGGAGGT CAGGAAGGAGAAATC  
CCCTCCAGTTCAAGTTCGGGGCCAAAGTTCTACCTGAAGATGTGGCTGAGGAGCTCATCC  
AGGACATCACCAGAACTTTCTTCTTCAAGTGAAGGAAGGAATCCTTAGCGATGAGAT  
CTACTGCCCCCTTGARACTGCCGTGCTCTTGGGGTCTACGCTTGTGCATGCCAAGTTTG  
GGACTACCACCAAGAAG

13746.1&2-13720.1&2

GAAGGAGTCGGGATACTCAGCATTGATGCACCCCAATTTCAAAGCGGCATTCTTCGGCAG  
GTCTCTGGGACAATCTCTAGGGTCACTACCTGGAACTCGTTAGGGTACA ACTGAATGCTG  
AAAGGAAAGAACACCTGCAGAACCGGACAGAAATTCACCCCGCGATCAGCTGATTGATC  
TCGGTCGACCAGAAGTCATGGCTAAAGATGACGAGGACGTTGTCAATTCCTGGGCTTTTC  
GAAGTGAGTCCAGCAGCAGTCTGAGGTATTCGGGCCGGTTATGCACCTGGACCAACAGCA  
CCAGCTCCCGGGGGGCCAGGTGCCAGCCTTATCTACATTCCTCAGGGTCTGATCAAAGTT  
CAGCTGGTACACCAGGGACCGGTACCGCAGCGTCAGGTTGTCCGCTCGGGCTGGGGGACC  
GCCGGGACCAAGGAAGCCGCCGACACGTTGGAGACCCTGCGGATGCCACAGCCACAGAG  
GGGTGGTCCCCACCGCGGCCGCGGCACCCCGCGGGTTGCGGCTCCAGCAACCGGTGGG  
GCGAGGGCCTCGTTCTTCTTTGTGCCCCATTGCTGCTCCAGAGGACGAAGCCGAGGCCG  
CCACCAGGAGCGTCAGGATTAGCACCTTCCGTTTGTAGATGCGGAACCTCATGGTCTCCAG  
GGCCGGGAGCGCAGCTACAGCTCGAGCGTCGGCGCCGCGCTAGGAGCCGCGGCTCGGCT  
TCGTCTCCGCTCTCTCCATT CAGCACCAGGGTCCCGGAAAAAGCTCAGCCSCGGTCCCAA  
CCGCACCCTAGCTTCGTTACCTGCGCCTCGCTTG

FIG. 15Q



14347.1

CAGATTTTATTGTCAGTCGTCCTGGGGCCGTTCTTGCTGCTTATTGTCTGCTAGCCTG  
CTCTTCCAGCTGCATGGCCAGGCGCAAGGCCTTGATGACATCTCGCAGGGCTGAGAAATGC  
TTGGCTTGCTGGGCCAGAGCAGATTCCGCTTTGTTCAAAAGGTCTCCAGGTCATAGTCTG  
GCTGCTCGGTCACTCAGAGAGCTCAAGCCAGTCTGGTCCTTGCTGTATGATCTCCTTGAG  
CTCTTCCATAGCCTTCTCCTCCAGCTCCCTGATCTGAGTCATGGCTTCTTAAAGCTGGACA  
TCTGGGAAGACAGTTCCTCCTCTCCTTGATAAAATTGCCCTGGAATCAGCGCCCCGTTAGA  
GCAGGCTTCCATCTCTTCTGTTTCCATTGAATCAACTGCTCTCCACTGGGCCCCACTGTGGG  
GGCTCAGCTCCTTGACCCTGCTGCATATCTTAAGGGTGTTAAAGGATATTCACAGGAGCT  
TATGCCCTGGT

14347.2

CTCCTCTTGGTACATGAACCCAAGTTGAAAGTGGACTTAACAAAGTATCTGGAGAACCAA  
GCATTCTGCTTTGACTTTGCATTTGATGAAACAGCTTCGAATGAAGTTGTCTACAGGTTTAC  
AGCAAGGCCACTGGTACAGACAATCTTGAAGGTGGAAAAGCAACTGTTTTCATATGG  
CCAGACAGGAAGTGGCAAGACACATACTATGGGCGGAGACCTCTCTGGGAAAGCCCAGAA  
TGCATCCAAAGGGATCTATGCCATGGCCTTCCGGGACGTCTTCTTCTGAAGAATCAACCCT  
GCTACCGGAAGTTGGGCTTGAAGTCTATGTGACATTCTTCGAGATCTACAATGGGAAGCT  
GTTTGACCTGCTCAACAAGAAGGCCAAGCTTGCAGCTGCTGGAAGACGGCAAGCAACAGG  
TGCAAGTGGTGGGGCTTGCAAGAACATCTGGNTAACTCTGCTTGATGATGGCANTCAAG  
ATGATCGACATGGGCAGCGCCTGCAGA

14348.2&14350.1&2

TCCCGAATTCAAGCGACAAATTGGAWAGTGAAATGGAAGATGCCTATCATGAACATCAGG  
CAAATCTTTTGCGCCAAGATCTGATGAGACGACAGGAAGAATTAAGACGCATGGAAGAAC  
TTCACAATCAAGAAATGCAGAAACGTAAAGAAATGCAATTGAGGCAAGAGGAGGAACGA  
CGTAGAAGAGAGGAAGAGATGATGATTCTGTCACGTGAGATGGAAGAACAATGAGGCG  
CCAAAGAGAGGAAAGTTACAGCCGAATGGGCTACATGGATCCACGGGAAAGAGACATGC  
GAATGGGTGGCGGAGGAGCAATGAACATGGGAGATCCCTATGGTTTCAGGAGGCCAGAAA  
TTTCCACCTCTAGGAGGTGGTGGTGGCATAGGTTATGAAGCTAATCTTGGCGTTCCACCAG  
CAACCATGAGTGGTTCCATGATGGGAAGTGACATGCGTACTGAGCGCTTGGGCAGGGAG  
GTGCGGGGCTGTGGGTGGACAGGGTCTAGAGGAATGGGCGCTGGAATCCAGCAGGAT  
ATGGTAGAGGGAGAGAAGAGTACGAAGGC

14349.1&2

TTCGTGAAGACCCTGACTGGTAAGACCATCACTCTCGAAGTGGAGCCCAGTGACACCATT  
GAGAATGTCAAGGCAAAGATCCAAGACAAAGGAGGATCCCTCCTGACCAGCAKAGGTTG  
ATCTTTGCTGGGAAACAGCTGGAAGATGGACGCACCCTGTCTGACTACAACATCCAGAAA  
GAGTCCACCCTGCACCTGGTGCTCCGTCTCAGAGGTGGGATGCAAATCTTCGTGAAGACCC  
TGACTGGTAAGACCATCACCTCGAGGTGGAGCCCAGTGACACCATCGAGAATGTCAAGG  
CAAAGATCCAAGATAAGGAAGGCATCCCTCCTGATCAGCAGAGGTTGATCTTTGCTGGGA  
AACAGCTGGAAGATGGACGCACCCTGTCTGACTACAACATCCAGAAAGAGTCCACTCTGC  
ACTTGGTCTGCGCTTGAGGGGGGGTGTCTAAGTTTCCCCTTTTAAGGTTTCAACAAATTC  
ATTGCACTTTCCTTTCAATAAAGTTGTTGCATT

FIG. 15R



14352.1&2

GCGCGGGTGGCTGGGCCACTGGGTGACCGACTTAGCCTGGCCAGACTCTCAGCACCTGGA  
AGCGCCCCGAGAGTGACAGCGTGAGGCTGGGAGGGAGGACTTGGCTTGAGCTTGTTAAAC  
TCTGCTCTGAGCCTCCTTGTGGCTGCATTTAGATGGCTCCCGCAAAGAAGGGTGGCGAGA  
AGAAAAAGGGCCGTTTGTCCATCAACGAAGTGGTAACCGAGAATACACCATCAACATTC  
ACAAGCGCATCCATGGAGTGGGCTTCAAGAAGCGTGCACCTCGGGCACTCAAAGAGATTC  
GGAAATTTGCCATGAAGGAGATGGGAACTCCAGATGTGCGCATTGACACCAGGCTCAACA  
AAGCTGTCTGGGCCAAAGGAATAAGGAATGTGCCATACCGAATCCGTGTGCGGCTGTCCA  
GAAAACGTAATGAGGATGAAGATTCACCAAATAAGCTATATACTTTGGTTACCTATGTACC  
TGTACCACCTTCAAAAATCTACAGACAGTCAATGTGGATGAGAACTAATCGCTGATCGT

14353.1

AATTCCTTTATTTAAATCAACAACTCATCTTCTCAAGCCCCAGACCATGGTAGGCAGCCC  
TCCCTCTCCATCCCCTACCCCAACCCTTAGCCACAGTGAAGGGAATGGAAAATGAGAAGC  
CACGAGGGCCCCCTGCCAGGGAAGGCTGCCCCAGATGTGTGGTGAGCACAGTCAGTGCAGC  
TGTGGCTGGGGCAGCAGCTGCCACAGGCTCCTCCCTATAAATTAAGTTCCTGCAGCCACAG  
CTGTGGGAGAAGCATACTTGTAGAAGCAAGGCCAGTCCAGCATCAGAAGGCAGAGGCAG  
CATCAGTGACTCCCAGCCATGGAATGAACGGAGGACACAGAGCTCAGAGACAGAACAGG  
CCAGGGGGAAGAAGGAGAGACAGAATAGGCCAGGGCATGGCGGTGAGGGA

14353.2

TGATGAATCTGGGTGGGCTGGCAGTAGCCCGAGATGATGGGCTCTTCTCTGGGGATCCCAA  
CTGGTTCCCTAAGAAATCCAAGGAGAATCCTCGGAACCTCTCGGATAACCAGCTGCAAGA  
GGGCAAGAACGTGATCGGGTTACAGATGGGCACCAACCGCGGGGCGTCTCANGCAGGCAT  
GACTGGCTACGGGATGCCACGCCAGATCCTCTGATCCCACCCAGGCCCTTGGCCCTGCCCT  
CCCACGAATGGTTAATATATATGTAGATATATATTTAGCAGTGACATTCCCAGAGAGGCC  
CAGAGCTCTCAAGCTCCTTTCTGTGAGGGTGGGGGTTCAAGCCTGTCTGTACCTCTGA  
AGTGCCTGCTGGCATCCTCTCCCCATGCTTACTAATACATTCCCTTCCCCATAGCC

17182.1&2

AGCGGAGCTCCCTCCCTGGTGGCTACAACCCACACAGCCAGGCTCAGGCATCGAGCAG  
AACTCCAGCGACTGGGTAACCACTGACATTCAGGTGAAGGTGCGGGACACCTACCTGGAT  
ACACAGGTGGTGGGACAGACAGGTGTCATCCGAGTGTACGCGGGGCGATGTGCTCTGTG  
TACCTGAAGGACAGTGAGAAGGTTGTGAGCATTTCCAGTGAGCACTGGAGCCTATCACC  
CCCACCAAGAACAACAGGTGAAAGTGATCCTGGGCGAGGATCGGGAAGCCACGGGCGT  
CCTACTGAGCATTGATGGTGAGGATGGCATTGTCCGTATGGACCTTGATGAGCAGCTCAAG  
ATCCTCAACCTCCGCTTCTGGGGAAGCTCCTGGAAGCCTGAAGCAGGCAGGGCCGGTGG  
ACTTCGTGCGATGAAGAGTGATCCTCCTTCCCTTCCCTGGCCCTTGGCTGTGACACAAGATC  
CTCCTGCAGGGCTAGGCGGATTGTTCTGGATTTCCTTTTGTCTTTAGGTTTCCATCT  
TTTCCCTCCCTGGTGTCTATTGGAATCTGAGTAGAGTCTGGGGGAGGGTCCCCACCTTCT  
GTACCTCCTCCCCACAGCTTGCTTTTGTGTACCGTCTTCAATAAAAAGAAGCTGTTTGGT  
CTA

FIG. 15S



17183.2

GGTTCACAGCACTGCTGCTTGTGTGTTGCCGCCAGGAATCCAGGCTCACAAGGCTATCT  
TAGCAGCTCGTTCTCCGGTTTTAGTGCCATGTTTGAACATGAAATGGAGGAGAGCAAAAA  
GAATCGAGTTGAAATCAATGATGTGGAGCCTGAAGTTTTTAAGGAAATGATGTGCTTCATT  
TACACGGGGAAGGCTCCAAACCTCGACAAAATGGCTGATGATTTGCTGGCAGCTGCTGAC  
AAGTATGCCCTGGAGCGCTTAAAGGTCATGTGTGAGGATGCCCTCTGCAGTAACCTGTCCG  
TGGAGAACGCTGCAGAAATTCTCATCTGGCCGACCTCCACAGTGCAGATCAGTTGAAAA  
CTCAGGCAGTGGATTTCACTCAACTATCATGCTTCGGATGTCTGGAGACCTCTTGGG

17186.1&2

TCGTAGCCATTTTTCTGCTTCTTTGGAGAATGACGCCACACTGACTGCTCATTGTCGTTGGT  
TCCATGCCAATTGGTGAAATAGAACCTCATCCGGTAGTGAGCCGGAGGGACATCTTGTC  
ATCAACGGTGATGGTGCGATTGGAGCATACCAGAGCTTGGTGTCTCGCCATACAGGGCA  
AAGAGGTTGTGACAAAGAGGAGAGATACGGCATGCCCTGTGCAGCCCTGATGCACAGTTCC  
TCTGCTGTGTA CTCTCCACTGCCAGCCGAGGGGCTCCCTGTCCGACAGATAGAAGATCA  
CTTCCACCCCTGGCTTG

17187.1&2

TGGCACACTGCTCTTAAGAACTATGAWGATCTGAGATTTTTTGTGTATGTTTTGACTCT  
TTTGAGTGGTAATCATATGTGTCTTTATAGATGTACATACCTCCTGCACAAATGGAGGGG  
AATTCATTTTCATCACTGGGAGTGCCTTAGTGTATAAAAAACCATGCTGGTATATGGCTTC  
AAGTTGTAAAAATGAAAGTGACTTTAAAAAGAAAATAGGGGATGGTCCAGGATCTCCACTG  
ATAAGACTGTTTTAAGTAACCTAAGGACCTTTGGGTCTACAAGTATATGTGAAAAAATG  
AGACTTACTGGGTGAGGAAATTCATTGTTTAAAGATGGTCGTGTGTGTGTGTGTGTGTG  
TGTGTTGTGTTGTGTTTTGTTTTTAAAGGGAGGGAATTTATTATTACCGTTGCTTGAAATT  
ACTGKGTAATATATGTYTGATAATGATTTGCTYTTTGVCMACTAAAAATTAGGVCTGTATA  
AGTWCTARATGCMTCCTGGGKGTGATYTTCCMAGATATTGATGATAMCCCTTAAATTT  
GTAACCYGCCTTTTCCCTTTGCTYTCMATTAAAGTCTATTCMAAAG

17191.1&89.1

GGGGGTAGGCTCTTTATTAGACGGTTATTGCTGTACTACAGGGTCAGAGTGCAGTGAAGC  
AGTGTGAGAGGCCCGCGTTTCAGCCCAAGAATGTGGATTTTCTCTCCCTATTGATCACAGTG  
GGTGGGTTTCTTCAGAAAAGCCCCAGAGGCAGGGACCAAGTGAAGTCCAAGGTTAGAAGTG  
GAAGTGGAAAGGCTTCAGTCACATGCTGCTTCCACGCTTCCAGGCTGGGCAGCAAGGAGGA  
GATGCCCCATGACGTGCCAGGTCTCCCCATCTGACACCAAGTGAAGTCTGGTAGGACAGCAG  
CCGCACGCTGCCTCTGCCAGGAGGCCAATCATGGTAGGCAGCATTGCAGGGTCAGAGGT  
CTGAGTCCGGAATAGGAGCAGGGGCAGGTCCCTGCGGAGAGGCACTTCTGGCCTGAAGAC  
AGCTCCATTGAGCCCTGCAGTACAGGYGTAGTGCCTTGGACCAAGCCACAGCCTGGTA  
AGGGGCGCCTGCCAGGGCCACGGCCAGGAGGCA

FIG. 15T



17192.1&2

TAATTTCTTAGTCGTTTGGAAATCCTTAAGCATGCAAAAGCTTTGAACAGAAGGGTTCACAA  
AGGAACCAGGGTTGTCTTATGGCATCCAGTTAAGCCAGAGCTGGGAATGCCTCTGGGTCAT  
CCACATCAGGAGCAGAAGCACTTGAATGTCGGTCTGCTGCCACGGTTTGGGCGCCACC  
ACGCCCACGTCCACCTCGTCTCCCTGCCGCCACGTCTGGGCGGCCAAGGTCTCCAAAA  
TTGATCTCCAGCTGAGACGTTATATCATTTGCTGGCTTCCGGAATGATGGTCCATAACCG  
AATCTTCAGCATGAGCCTCTTCACTCTTTGATTTATGAAGAACAATCCCTCTTCCACTGC  
CCATCAGCACCTTCATTTGGTTTTCGGATATTAAATTTACTTTTGCCCGGTCTTATTTGA  
ATAGCCTTCCACTCATCCAAAGTCATCTCTTTGGACCCTCCTCTTTACCTCTTCAACTTCA  
TTCTCTTATTTTCAAGTGTCTGCCACTGGATGATGTTCTTACCTTCAGGTGTTTCTCAGTC  
ACATTTGATTGATCCAAGTCAGTTAATTCGTCTTTGACAGTTCCCCAGTTGTGAGATCCGCT  
ACCTCCACGTTTGTCTCGTCTCAGGCCAGATCTATCACTTCCACTATGCCTATCAAATT  
CACGTTTGGCACGAGAATCAAATCCATCTCCTCGGCCATTCCACGTCCACGGCCCCCTCG  
ACCTCTTCCAAGACCACCACGACCTCGAATAGGTGGTCAATAATCGGTCTATCAACTGAA  
AATTCGCCCTCCTTACCTTTTCTTCAAGTGGCTTTTGAATCTTCGTTACGAGGTGGTCG  
CCTTTCTGGTCTTCTATCAATTATTTCCCTTACCCTGAAGTTGTTGATCAGGTCTTCTTCC  
AACTCGTGC

17193

AAGCGGATGGACCTGAGTCAGCCGAATCCTAGCCCCCTCCCTTGGGCCTGCTGTGGTGCTC  
GACATCAGTGACAGACGGAAGCAGCAGACCATCAAGGCTACGGGAGGCCCGGGCGCTT  
GCGAAGATGAAGTTTGGCTGCCTCTCCTTCCGGCAGCCTTATGCTGGCTTTGTCTTAAATG  
GAATCAAGACTGTGGAGACGCGCTGGCGTCTCTGCTGAGCAGCCAGCGGAAGTGTACCA  
TCGCCGTCCACATTGCTCACAGGGACTGGGAAGGCGATGCCTGTCGGGAGCTGCTGGTGG  
AGAGACTCGGGATGACTCCTGCTCAGATTCAGGCCTTGTCTCAGGAAAGGGGAAAAGTTTG  
GTCGAGGAGTGATAGCGGGACTCGTTGACATTGGGGAACTTTGCAATGCCCGAAGACT  
TAACTCCCGATGAGGTGTGGAACTAGAAAATCAAGCTGCACTGACCAACCTGAAGCAGA  
AGTACCTGACTGTGATTTCAAACCCAGGTGGTTACTGGAGCCCATACCTAGGAAAGGAG  
GCAAGGATGTATCCAGGTAGACATCCAGAGCACCTGATCCCTTTGGGGCATGAAGTGT  
GACAAGTGTGGGCTCCTGAAAGGAATGTTCCRGAGAAACCAGCTAAATCATGGCACCTTC  
AATTTGCCATCGTGACGCAGACCTGTATAAATTAGGTTAAAGATGAATTTCCACTGCTTTG  
GAGAGTCCCACCCACTAAGCACTGTGCATGTAAACAGGTTCTTTGCTCAGATGAAGGAA  
GTAGGGGGTGGGGCTTTCCTTGTGTGATGCCTCCTTAGGCACACAGGCAATGTCTCAAGTA  
CTTTGACCTTAGGGTAGAAGGCAAAGCTGCCAGTAAATGTCTCAGCATGTCTGCTAATTTT  
GGTCTGCTAGTTTCTGGATTGTACAAATAAATGTGTTGTAGATGA

FIG. 15U



16443.1.edit

TCGAGCGGCCGCCGGGAGGTGTCGGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT  
TCTCCGGCTGCCATTGCTCTCCCACTCCACGGCGATGTCGCTGGGATAGAAGCCTTTGAC  
CAGGCAGGTGAGGCTGACCTGGTCTTGGTCATCTCTCCCGGATGGGGGAGGGTGTAC  
ACCTGTGGTTCTCGGGGCTGCCCTTTGGCTTTGGAGATGGTTTTCTCGATGGGGGCTGGCA  
GGGCTTTGTTGGAGACCTTGCACTTGTAATCTCTTGCCATTCAACCAGTCTGGTGCANGAC  
GGTGAGGACGCTNACCACACGGTACGNGCTGGTGTACTGCTCTCCCGGGCTTTGTCTTG  
GCATTATGCACCTCCACGGCTCCACGTACCAATTGAATTGACCTCAGGGTCTTCGTGGC  
TCACGTCCACCACCACGCATGTAACTCAAANCTCGGNCGGCAGNCACGC

16443.2.edit

AGCGTGGTTCGGGCCGAGGTCTGAGGTTACATGCGTGGTGGTGGACGTGAGCCACGAAGA  
CCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAA  
GCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGCGTCTCACCGTCTTCA  
CCAGGACTGGCTGAATGGCAAGGAGTACAAGTCAAGGTCTCCAACAAAGCCCTCCAGC  
CCCCATCGAGAAAACCATCTCAAAGCCAAAGGGCAGCCCCGAGAACCACAGGTGTACAC  
CGTCCCCCATCCCGGGAGGAGATGACCAAGAACCAGGTGAGCTGACCTGCCTGGTCAA  
AGGCTTCTATCCACGGACATCGCCCGTGGAGTGGGAGAGCAATGGGCAGCCGGAGAACA  
ACTACAAGACCACGCTCCCGTGGTGGACTCCGACACCTGCCGGGCGCCGCTCGA

16444.2.edit

AGCGTGGTTNCGGCCGAGGTCCCAACCAAGGCTGCANCTGGATGCCATCAAAGTCTTCTG  
CAACATGGAGACTGGTGAGACCTGCGTGTACCCCACTCAGCCCAAGTGTGGCCAGAAAGAA  
CTGGTACATCAGCAAGAACCCTAAGGACAAGAGGCATGTCTGGTTCGGCGAGAGCATGAC  
CGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCTGCCGATGTGGACCTGCCC  
GGGCGGNCGCTCGA

16445.1.edit

AGCGTGGTTCGGGCCGAGGTCAAGAACCCCGCCGACCTGCCGTGACCTCAAGATGTGC  
CACTCTGACTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCAAGGCTGCAACCTGGAT  
GCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCGTGTACCCCACTCAGCCCA  
GTGTGGCCAGAAAGTGGTACATCAGCAAGAACCCCAAGGACAAGAGGCATGTCTGGT  
TCGGCGAGAGCATGACCGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCTG  
CCGATGTGGACCTGCCCGGGCGGCCGCTCGA

FIG. 15V



16445.2.edit

TCGAGCGGTCGCCCCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG  
AACTGGAATCCATCGGNCATGCTCTCGCCGAACCAGACATGCCTCTTGNCCTTGGGGTTCT  
TGCTGATGTACCAAGNTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC  
ANTCTCCATGTTGCANAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC  
CAGTACTCTCCACTCTTCCAGACAGAGTGGCACATCTTGAGGTCACGGCAGGTGCGGGCGG  
GGTTCTTGACCTCGGTCGCGACACGCT

16446.1.edit

TCGAGCGGCCGCCCCGGGCAGGTCTCTCAGAGCGGTAGCTGTTCTTATTGCCCCGGCAGC  
CTCCATAGATNAAGTTATTGCANGAGTTCTCTCCACGTCAAAGTACCAGCGTGGGAAGG  
ATGCACGGCAAGGCCAGTGACTGCGTTGGCGGTGCAGTATTCTTCATAGTTGAACATATC  
GCTGGAGTGGACTTCAGAA TCCTGCCTTCTGGGAGCACTTGGGACAGAGGAATCCGCTGC  
ATTCCTGCTGGTGGACCTCGGCCGCGACACGCT

16446.2.edit

AGCGTGGTCGCGGCCGAGGTCCACCAGCAGGAATGCAGCGGATTCTCTGTCCCAAGTGC  
TCCCAGAAGGCAGGATTCTGAAGACCACTCCAGCGATATGTTCAACTATGAAGAATACTG  
CACCGCCAACGCAGTCACTGGGCCTTGCCGTGCATCCTTCCCACGCTGGTACTTTGACGTG  
GAGAGGAACTCCTGCAATAACTTCATCTATGGAGGCTGCCGGGGCAATAAGAACAGCTAC  
CGCTCTGAGGAGGACCTGCCCGGGCGGCCGCTCGA

16447.1.edit

TCGAGCGGCCGCCCCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG  
AACTGGAATCCATCGGTCATGCTCTCGCCGAACCAGACATGCCTCTTGTCCTTGGGGTTCT  
TGCTGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC  
AGTCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC  
CAGTACTCTCCACTCTTCCAGCCAGAATGGCACATCTTGAGGTCACGGCANGTGGGGCGG  
GGTTCTTGACCTCGGCCGCGACACGCT

FIG. 15W



16447.2.edit

AGCGTGGTCGCGGCCGAGGTCAAGAAACCCCGCCGACCTGCCGTGACCTCAAGATGTG  
CCTCTGGCTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCAAGGCTGCAACCTGGA  
TGCCATCAAAGTCTCTGCAACATGGAGACTGGTGAGACCTGCGTGTACCCCACTCAGCCC  
AGTGTGGCCCAAGAAGTGGTACATCAGCAAGAACCCCAAGGACAAGAGGCATGTCTGG  
CTCGGCGAGAGCATGACCGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCT  
GCCGATGTGGACCTGCCCGGGCGGCCGCTCGA

16449.1.edit

AGCGTGGTCGCGGCCGAGGTCTGTGTCAGAGTGGCACTGGTAGAAGNTCCAGGAACCTGA  
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTG  
CTGNAATGGGGCCCATGANATGGTTGNCTGAGAGAGAGCTTCTGTCTACATTTCGGCGG  
GTATGGTCTTGGCCTATGCCCTATGGGGGTGGCCGTTGNGGGCGGTGNGGTCCGCCTAAAA  
CCATGTTCTCAAAGATCAATTTGTTGCCCAACACTGGGTTGCTGACCANAAGTGCCAGGAA  
GCTGAATACCATTTCCAGTGTCAACCCAGGGTGGGTGACGAAAGGGGTCTTTGAAGTGT  
GGAAGGAACATCCAAGATCTCTGNTCCATGAAGATTGGGGTGTGGAAGGGTTACCAATTG  
GGGAAGCTCGCTGTCTTTTCTTCCAATCANGGGCTCGCTCTTCTGAATATTCTTCAGGGC  
AATGACATAAATTGTATATTTCGGTTCCCGGTTCCAGGCCAG

16450.1.edit

TCGAGCGGCCCGCCGGGCGAGGTCCACCACACCCAATTCTTGCTGGTATCATGGCAGCCGC  
CACGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCTCCAGAGA  
AGTGGTCCCTCGGCCCGCCCTGGTGTACAGAGGGCTACTATTACTGGCCTGGAACCGGGA  
ACCGAATATACAATTTATGTATTGCCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTG  
GAAGGAAAAAGACAGACGAGCTTCCCAACTGGTAACCTTCCACACCCCAATCTTCATG  
GACCAGAGATCTTGGATGTTCTTCCACAGTTCAAAAGACCCCTTTCGTACCCACCTTG  
GTATGACACTGGAAATGGTATTGAGCTTCTGGCACTTCTGGTCAGCAACCCAGTGTGGG  
CAACAAATGATCTTTGANGAACATGGNTTTAGGCGGACCACACCGGCCACAACGGGCACC  
CCCATAAGGCATAGGCCAAGAACATACCCGNCGAATGTAGGACAAGAAGCTCTNTCTCAN  
ACAANCATCTCATGGGCCCCATTCCANGACACTTCTGAGTACATCANTTCATGGCATCCTG  
GTGGCACTGATAAAACCCTTACAGTTA

16450.2.edit

AGCGTGGTCGCGGCCGAGGTCTGTGTCAGAGTGGCACTGGTAGAAGTTCAGGAACCTGA  
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTG  
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTGTCTACATTTCGGCGGG  
TATGGTCTTGGCCTATGCCCTATGGGGGTGGCCGTTGTGGGCGGTGGTCCGCCTAAAA  
CATGTTCTCAAAGATCAATTTGTTGCCCAACACTGGGTTGCTGACCAGAAGTGCCAGGAAG  
CTGAATACCATTTCCAGTGTCAACCCAGGGTGGGTGACGAAAGGGGTCTTTGAAGTGTG  
GAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCAATTGG  
GGAAGCTCGTCTGTCTTTTCTTCCAATCANGGGCTCGCTCTTCTGATTATTCTTCAGGGC  
AATGACATAAATTGTATATTGONTCCCGGGTNCAGCCAATAATAAACCCCTGTGTGACA  
CCANGGCGGGGCCGAAGGANCACT

FIG. 15X



16451.1  
16451.2  
16452.1  
16452.2

16451.1.edit

AGCGTGGTCGCGGCCGAGGTCCTCACCAGAGGTACCACCTACAACATCATAGTGGAGGCA  
CTGAAAGACCAGCAGAGGCATAAGGTTGCGGAAGAGGTTGTTACCGTGGGCAACTCTGTC  
AACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCCATT  
ATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAGTG  
CTTANGCTTTGGAAGTGGTCATTTCAGATGTGATTTCATCTAGATGGTGCCATGACAATGGT  
GTGAACTACAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAAATGGACCTGCCCGGGC  
GGCCGCTCGA

16451.2.edit

TCGAGCGGGCCCGGGGAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT  
AGTTCACACCATTTGTCATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA  
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTTCAGACATTCGTTCCCACTCATCTCCA  
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAG  
CCTTCGNTGACAGAGTTGCCACGGTAACAACCTCTTCCCGAACCTTATGCCTCTGCTGGT  
CTTTCAGTGCCTCCACTATGATGTTGTAGGTGGTACCTCTGGTGAGGACCTCGGCCGCGAC  
CACGCT

16452.1.edit

AGCGTGGCCCGCGGCCGAGGTCCATTGGCTGGAACGGCATCAACTTGAAGCCAGTGATCG  
TCTCAGCCTTGGTTCTCCAGCTAATGGTGATGGNGGTCTCAGTAGCATCTGTACACGAGC  
CCTTCTGGTGGGCTGACATTCTCCAGAGTGGTGACAAACCCCTGAGCTGGTCTGCTTGTC  
AAAGTGTCTTAAAGAGCATAGACACTCACTTCATATTTGGCGNCCACCATAAGTCCTGATA  
CAACCACGGAATGACCTGTCAGGAAC

16452.2.edit

TCGAGCGGGCCCGGGGAGGTCCTCAGACCGGGTTCTGAGTACACAGTCAGTGTGGTTGC  
CTTGACAGATGATATGGAGAGCCAGCCCCTGATTGGAACCCAGTCCACAGCTATTCCTGCA  
CCAACTGACCTGAAGTTCACCTCAGGTACACCCACAAGCCTGAGCGCCCACTGGACACCA  
CCCAATGTTTCAGCTCACTGGATATCGAGTGGGGTGACCCCAAGGAGAAGACCGGACCA  
ATGAAAGAAATCAACCTTGCTCCTGACAGCTCATCCGTGGTTGTATCAGGACTTATGGCGG  
CCACCAAATATGAAGTGAGTGTCTATGCTCTTAAGGACACTTTGACAAGCAGACCAGCTCA  
GGGTGTTGTCACCACTCTGGAGAAATGTACGCCCAAGAAGGGCTCGTGTGACAGATGC  
TACTGAGACCACCATCACCATTAGCTGGAGAACCAAGACTGAGACGATCACTGGCTTCCA  
AGTTGATGCCGTTCCAGCCAATGGACCTCGGCCGCGACCACGCTT



16453.1.edit

AGCGTGGTCGCGGCCGAGGTCTGGCCGAAGTCCAGTGTACAGGGAAGATGTACATGTTA  
TAGNTCTTCTCGAAGTCCCGGGCCAGCAGCTCCACGGGGTGGTCTCCTGCCTCCAGGCGCT  
TCTCATCTCATGGATCTTCTTACCCCGCAGCTTCTGCTTCTCAGTCAGAAGGTTGTTGTCC  
TCATCCCTCTCATACAGGGTGACCAGGACGTTCTTGAGCCAGTCCCGCATGCGCAGGGGGA  
ATTCGGTCAGCTCAGAGTCCAGGCAAGGGGGGATGTATTGCAAGGCCCGATGTAGTCCA  
AGTGGAGCTTGTGGCCCTTCTTGGTGCCCTCCAAGGTGCACCTTGTGGCAAAGAAGTGGCA  
GGAAGAGTCGAAGGTCTTGTGTCATTGCTGCACACCTTCTCAAACCTCGCCAATGGGGGCT  
GGGCAGACCTGCCCGGGCGCCGCTCGA

16453.2.edit

TCGAGCGGCCCGCCGGGCAGGTCTGCCAGCCCCATTGGCGAGTTTGAGAAGGNGTGCA  
GCAATGACAACAAGACCTTCGACTCTTCTGCCACTTCTTTGCCACAAAGTGACCCCTGGA  
GGGCACCAAGAAGGGCCACAAAGCTCCACCTGGAATCATCGGGCCTTGCAAATACATCCC  
CCCTTGCTGGACTCTGAGCTGACCGAATCCCCCTGCGCATGCGGGACTGGCTCAAGAAC  
GTCCTGGTCACCCTGTATGAGAGGGATGAGGACAACAACCTTCTGACTGAGAAGCANAAG  
CTGCGGGTGAAGAAATCCATGAGAATGANAAGCGCCTGNAGGCANGAGACCACCCCGT  
GGAGCTGCTGGCCCGGGACTTCGAGAAGAACTATAACATGTACATCTTCCCTGTACACTGG  
CAGTTCGGCCAGACCTCGGCCGCGACACGCT

16454.1.edit

AGCGTGGNTGCGGACGACGCCCACAAAGCCATTGTATGTAGTTTTANTTCAGCTGCAAAAN  
AATACCNCAGCATCCACCTTACTAACCAGCATATGCAGACA

16454.2.edit

TCGAGCGGTGCCCCGGGCAGGTCTGGGCGGATAGCACCGGGCATATTTGGAATGGATGA  
GGTCTGGCACCCTGAGCAGCCCAGCGAGGACTTGGTCTTAGTTGAGCAATTTGGCTAGGA  
GGATAGTATGCAGCAGGTTCTGAGTCTGTGGGATAGCTGCCATGAAGNAACCTGAAGGA  
GGCGCTGGCTGGTANGGGTTGATTACAGGGCTGGGAACAGCTCGTACACTTGCCATTCTCT  
GCATATACTGGNTAGTGAGGCGAGCCTGGCGCTCTTCTTTGCGCTGAGCTAAAGCTACATA  
CAATGGCTTTGNGGACCTCGGCCGCGACACGCTT



16455.1.edit

TCGAGCGGCCGCCGGGCAGGTCCATTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT  
AGTTCACACCAATTGTCATGACACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA  
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTGAGACATTGTTCCCACTCATCTCCA  
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAG  
CCTTCGTTGACAGAAGTTGCCACGGTAACAACCTCTTCCCGAACCTTATGCCTCTGCTGGT  
CTTCAAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCGGCCGCGA  
CCACGCT

16455.2.edit

AGCGTGGTTTGGCGCCGAGGTCTCACCANAGGTGCCACCTACAACATCATAGTGGAGGC  
ACTGAAAGACCAGCAGAGGCATAAGGTTCCGGGAAGAGGTTGTTACCGTGGGCAACTCTGT  
CAACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGNTTCCCAT  
TATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAGT  
GCTTANGCTTTGGAAGTGGTCATTTGAGATGTGATTGATCTANATGGTGTGATGACAATGG  
TGNGAACTACAAGATTGGAGAGAAGTGGNACCGTCAGGGGANAAAATGGACCTGCCCGG  
CGGCNCGCTCGA

16456.1.edit

AGCGTGGTCGCGCCGAGGTCTGGCTTCTGCTCANGTGATTATCCTGAACCATCCAGGCC  
AAATAAGCGCCGGCTATGCCCTGNATTGGATTGCCACACGGCTCACATTGCATGCAAGT  
TGCTGAGCTGAAGGAAAAGATTGATC

16456.2.edit

TCGAGCGGCCGCCGGGCAGGTCCAATTGAAACAAACAGTTCTGAGACCGTTCTTCCACCA  
CTGATTAAGAGTGGGNGCGGGTATTAGGGATAATATTCAITTAGCCTTCTGAGCTTTCT  
GGGCAGACTTGGTGACCTTGCCAGCTCCAGCAGCCTTCTGGTCCACTGCTTTGATGACACC  
CACCGCAACTGTCTGTCTCATATCACGAACAGCAAAGCGACCCAAAGGTGGATAGTCTGA  
GAAGCTCTCAACACACATGGGCTTGCCAGGAACCATATCAACAATGGGCAGCATCACCAG  
ACTTCAAGAAATTTAAGGGCCATCTTCCAGCTTTTACCAGAACGGCGATCAATCTTTTCCTT  
CAGCTCAGCAAACCTTGCATGCAATGTGAGCCG

**FIG. 15AA**



[illegible]

16459.2.edit

16460.1.edit

16460.2.edit

**FIG. 15BB**



16461.1.edit

AGCGTGGTCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA  
CTGGAATCCATCGGTCATGCTCTCGCCGAACCAGACATGCCTCTTGCTTGGGGTTCTTGC  
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACCAGT  
CTCCATGTTGCAGAAGACTTTGATGGCATCCAGGNTGCAACCTGGTGGGGTCAATCCAG  
TACTCTCCACTCTTCCAGCCAGAGTGGCACATCTTGAGGTACGGCAGGTGCGGNCGGGGG  
NTTTGCGGCTGCCCTCTGGNCTTCGGNTGTNCTCNATCTGCTGGCTCA

16461.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTCGCGGTCGCACTGGTGATGCTGGTCTGTGGTCCCC  
CCGGCCCTCCTGGACCTCCTGGCCCCCTGGTCTCCAGCGCTGGTTTCGACTTCAGCTTC  
CTGCCCCAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGAT  
GCCAATGTGGTTCGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTGAGCCAG  
CAGATCGAGAACATCCGGAGCCCAGAGGGCAGNCGCAAGAACCCCGCCCGCACCTGCCGT  
GACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCA  
GCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCGTGTA  
CCCCACTCAGCCCAGTGTGGCCAAAAGAACTGGTACATCAGCAAGAACCCCAAGGACAA  
GAAGCATGTCTGGTTCGGCGAGAACATGACCGATGGATTCCAGTTCGAGTATGGCGGGCA  
GGGCTCCGACCCTGCCGATGGGGACCTTGGCCGGAACACGCT

16463.1.edit

AGCGTGGNNGCGGCCGAGGTATAAATATCCAGNCCATATCCTCCCTCCACAGCTGANAG  
ATGAAGCTGTNCAAAGATCTCAGGGTGGANAAAACCAT

16463.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTTCAGACTTGGACTGTGTCACTGCCAGGCTTCCAG  
GGCTCCAACCTTGCAGACGGCCTGTGTGGGACAGTCTCTGTAATCGCGAAAGCAACCATG  
GAAGACCTGGGGGAAAACACCATGGTTTTATCCACCCTGAGATCTTTGAACAACCTCATCT  
CTCAGCGTGGGAGGGAGGCTCTGGACTGGATATTCTACCTCGGCCGCGACACGCT



16464.1.edit

16464.1.edit

CGAGCGGGCGACCGGGCAGGTNCAGACTCCAATCCANANAACCATCAAGCCAGATGTCAG  
AAGCTACACCATCACAGGTTTACAACCAAGGCACTGACTACAAGANCTACCTGCACACCTTG  
AATGA~~CA~~AATGGCTCGGAGCTCCCTGTGGTCATCGACGCCTCCACTGCCATTGATGCACCAT  
CCAACCTGCGTTTCTGGCCACCACACCAATTCTTGCTGGTATCATGGCAGCCGCCAGG  
TGCCAGGATTACCGGTACATCATCNAGTATGANAAGCCTGGGCCCTCCTCCAGAGAAAGNG  
GTCCCTCGGCCCCGCGCTGNTGTCCANAGGNTACTATTACTGNGCCNGCAACCGGCAACC  
GATATCNATTTTGNCAATTGGCCTTCAACAATAATTA

16464.2.edit

AGCGTGGTTCGCGGCCGANGTCCTGTCTCAGAGTGGCACTGGTAGAAGTTCCAGGAACCCCTG  
AACTGTAAAGGTTCTTCATCAGNGCCAACAGGATGACATGAAATGATGTACTCAGAAGTG  
TCCTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGNCTGTCTTTTCC  
TTCCAATCAGGGGCTCGCTCTTCTGATTATTCTTCAGGGCAATGACATAAATTGTATATTCTG  
GGTCCCGGNTCCAGGCCAGTAATAGTANCCCTGTGACACCAGGGCGGNGCCGAGGGACC  
ACTTCTCTGGGAGGAGACCCAGGCTTCTCATACTTGATGATGTAACCGGTAATCCTGGCAC  
GTGGCGGCTGCCATGATACCAGCAAGGAATTGGGGTGTGGTGGCCAGGAAACGCAAGTTG  
GATGGNGCATCAATGGCAGTGGAGGCCGTCGATGACCACAGGGGGAGCTCCGACATTGTC  
ATTCAAGGTG

16465.1.edit

AGCGTGGNCGCGGCCGAGGTGCAGCGCGGGCTGTGCCACCTTCTGCTCTCTGCCCAACGAT  
AAGGAGGGTNCCTGCCCCCAGGAGAACATTAACNTNTCCCAGCTCGGCCTCTGCCG

16465.2.edit

TCGAGCGGCCGCCCGGGCAGGTTTTTTTTGCTGAAAGTGGN~~TA~~CTTTATTGGNTGGGAAAG  
GGAGAAGCTGTGGTCAGCCCAAGAGGGAATACAGAGNCCCGAAAAAGGGGAGGGCAGGT  
GGGCTGGAACCAAGACGAGGGCCAGGCAGAACTTTCTCTCCTCACTGCTCAGCCTGGTG  
GTGGCTGGAGCTCANAAATTGGGAGTGACACAGGACACCTTCCCACAGCCATTGCGGGCGG  
CATTTATCTGGCCAGGACACTGGCTGTCCACCTGGCACTGGTCCCGACAGAAGCCCGAGC  
TGGGGAAAGTTAATGTTACCTGGGGGCAGGAACCTCCTTATCATTGNGCAGAGAGCAG  
AAGGTGGCACAGCCCGCTGCACCTCGGCCGCGACACGCT

16466.2.edit

TCGAGCGGCCGCCCGGGCAGGTCCACCATAAGTCTGATACAACCACGGATGAGCTGTCA  
GGAGCAAGGTTGATTCTTTCAATTGGTCCGGNCTTCTCCTGGGGGNCAACCGCACTCGAT  
ATCCAGTGAGCTGAACATTGGGTGGCGTCCACTGGGCGCTCAGGCT

16467.2.edit

TCGAGCGGTTGCCCCGGGCAGGTCCACCACACCAATTCTTGCTGGTATCATGGCAGCCG  
CCACGTGCCAGGATTACCGGTACATCAAGTATGAGAAGCCTGGGTCTCCTCCAGAG  
AAGCGGTCCCTCGGCCCGCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGG  
AACCGAATATACAATTTATGTCATTGNCCTGAAGAATAATCANNAANAGCGANCCCTGA  
TTGGAAGGA

FIG. 15DD



[illegible]

02 16469.edi

03\_16470.edit

04\_16470.edit

05\_16471.edit

**FIG. 15EE**



06\_16471.edit

AGCGTGGTCGCGGCCGAGGTCTGCTGCTTCAGCGAAGGGTTCTGGCATAACCAATGATA  
AGGCTGCCAAAGACTGTTCCAATACCAGCACCAGAACCCAGCCACTCTACTGTTGCAGCAC  
CTGCACCAATAAATTTGGCAGCAGTATCAATGTCTCTGCTGATTGCACTGGTCTGAAACTC  
CCTTTGGATTAGCTGAGACACACCAATTCTGGGCCCTGATTTCTCTAAGATAGAACTCCAAC  
TCCTTGCCCTCTAGCACATAGCCATCTGCTCGGTCACTGTCCCGGCCCTGAAGCGATGC  
ACGCAAGAAGCTTGCCCTGCTGGAACCTGCTCCTCCAGGAGACTGCTGATTTTGGCATTCTT  
TTTCTTTTCATCATATTTCTTCTGAATTTTTTAGATCGTTTTTTGTTTAAAAATCTCTTCTCC  
TCAGGAGTCAGCTTGCCCCCGCCGCATCCACACAGTCCGTGTGCGGGGAGGTAACAAGA  
AATACCGTGCCCTGAGGTGGACGTGGGGAAATTTCTCTGGGGCTCAGAGTGGTGTACTCG  
TAAACAAGGATCATCGATGGTGNCTACAATGCATCTAATAACGAGCTGGGTCCGACCCA  
AAGAACCTGGNGAANAATGGATCGNCTCATCGACAGGACACCGTACCCGACAGGGGNA  
CGANTCCCACTATGCGCTTGCCCTGGGCCGCAANAAAGGAAAACTGCCCGGGCGGCCNT  
CGAAAGCCCAATTNTGAAAAAATCCATCACACTGGGNGGCCNGTCGAGCATGCATNTAN  
AGGGGCCCATCCCCCTNANN

07\_16472.edit

TCGAGCGGCCCGCCGGGCAGGTCCCCAACCAAGGCTGCAACCTGGATGCCATCAAAGTCT  
TCTGCAACATGGAGACTGGTGAGACCTGCGTGTACCCCACTCAGCCAGTGTGGCCAGCA  
AGAACTGGTACATCAGCAAGAACCCTAAGGACAAGAGGCATGTCTGGTTCCGGCAGAGCA  
TGACCGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCCTGCCGATGTGGACCT  
CGGCCGCGACACGCT

08\_16472.edit

AGCGTGGTCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA  
CTGGAATCCATCGGTCTGCTCTCGCCGAACCAGACATGCCTCTTGCTCTGGGGTTCTTGC  
TGATGTACCACTTCTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACCAGT  
CTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGCTTGGGGACCTGCCCC  
GGCGGCCGCTCGA

09\_16473.edit

TCGAGCGGCCCGCCGGGCAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCGC  
CACGTGCCAGGATTACCGGCTACATCAAGTATGAGAAGCCTGGGTCTCTCCAGAGA  
AGTGGTCCCTCGGCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGA  
ACCGAATATACAATTTATGTCTTGGCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTG  
GAAGGAAAAAGACAGACGAGCTTCCCCAACTGGTAACCTTCCACACCCAATCTTCATG  
GACCAGAGATCTTGGATGTTCTTCCACAGTTCAAAAGACCCCTTTCGTCACCCACCTGG  
GTATGACACTGGAAATGGTATTAGCTTCTGTCAGCTTCTGGTACGCAACCAAGTGTGGG  
CAACAAATGATCTTTGAGGAACATGGNTTTAGGCGGACCACACCGCCCAACCGGCCACC  
CCCATAGGCATAGGCCAAGACCATAACCGCCGAATGTAGGACAAGAAGCTNTNTNCAN  
ACACCATNTNATGGGCCCCATTCCAGGACACTTCTGAGTACATCATTTATGNCATCTGTGG  
CACTTGATGAAAAACCTTACAGTTCAAGGTTCTGGAACCTTTACAGGCCNTTTACAGGAC  
TNGGCCGGACNCCTTAAGCCNATTCACCCCTGGGGCGTTCTANGGTCCCACTCGNNCACTG  
GNGAAATGGCTACTGTN

FIG. 15FF



11\_16474.edit

AGCGTGGTCGCGGCCGAGGTCCACTAGAGGTCTGTGTGCCATTGCCAGGCAGAGTCTCTG  
CGTTACAAACTCCTAGGAGGGCTTGCTGTGCGGAGGGCCTGCTATGGTGTGCTGCGGTTCA  
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTTGTGGTGTCTGNGAACTCCNAGGACANG  
AGGGCTAAATTCCATGAAGTTTGTGGATGGCCTGATGATCCACAATCGGAGACCCCTGTTAA  
CTACTACCGTCTNACCNCCTGCTGTNCNCCCCNTTCTGCTNAANACATNGGGNTNNTNC  
TTGNCCNTCCTTGGGTNGAANATNNAATNGCCTNCCNTTNCNTANCNTACTNGNTCCANA  
NTTGGCCTTTAAANAATCCNCCTTGCCCTNNNCACTGTTCANNTNTTNTTCGTAAACCCCT  
ATNANTTNATTANATNNTNNNNNCTCACCCCCCTNCATTNANCCNATANGCTNNNA  
ANTCCTTNANNCTCCCNCCNNTNCNCTCNTACTNANTNCTTCTNNCCCATACNNAGCT  
CTTTCNTTTAANATAATGNNGCCNNGCTCTNCATNTCTACNATNTGNNAATNCCCCNCC  
CCCNANCGNNTTTTGACCTNNNAACCTCCTTTCCTCTCCCTNCNAAATTNCNNANTTCC  
NCNTTCCNNTTTTCGGNTNNTCCCATNCTTCCANNCTTCANTCTANCNCNCTNCAACT  
TATTTTCTNTCATCCCTTNTCTTTACANNCCCCCTNNTCTACTCNCNNTTNCATTANAT  
TTGAAACTNCCACNNCTANTTNCCTCNCTCTACNNTTTATTTTNCGNTCNCTCTACNTAAT  
ANTTTAATNANTTNTCN

12\_16474.edit

TCGAGCGGCCGCCCGGGCAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGGACTGGCTG  
GGGCATGGCAGGCGGCTCTGGCTTCCCAACCCTTCTGTTCTGAGATGGGGGTGGTGGGCAGT  
ATCTCATCTTTGGGTCCACAATGCTCACGTGGTCAGGCAGGGGCTTCTTAGGGCCAATCT  
TACCAGTTGGGTCCCAGGGCAGCATGATCTTCACCTTGATGCCAGCACACCCTGTCTGAG  
CAACACGTGGCGCACAAGCAGTGTCAACGTAGTAAGTTAACAGGGTCTCCGCTGTGGATC  
ATCAGGCCATCCACAACTTCATGGATTTAGCCCTCTGTCTCGGAGTTTCCAGACACCA  
CAACCTCGCAGCCTTTGGCCCCACTCTCCATGATGAACCGCAGCACACCATAGCAGGCCCT  
CCGCACAAGCAAGCCCTCCTAAGAATTTGTAACGCANANACTCTGCTGGCAATGGCACAC  
AAACCTCTAGTGGACCTCGGNCGCGACCACGC

13\_16475.edit

TCGAGCGGCCGCCCGGGCAGGTCTGGTCCAGGATAGCCTGCGAGTCCTCCTACTGCTACTC  
CAGACTTGACATCATATGAATCATACTGGGGAGAATAGTTCTGAGGACCAGTAGGGCATG  
ATTCACAGATTCCAGGGGGGCCAGGAGAACCAGGGGACCCTGGTTGCTCTGGAATACCAG  
GGTCACCATTTCTCCCAGGAATACCAGGAGGGCCTGGATCTCCCTTGGGGCCTTGAGGTCC  
TTGACCATTAGGAGGGCGAGTAGGAGCAGTTGGAGGCTGTGGGCAAACCTGCACAACATTC  
TCCAAATGGAATTTCTGGGTGGGGCAGTCTAATTCCTTGATCCGTCACATATTATGTCATCG  
CAGAGAACGGATCCTGAGTCACAGACACATATTTGGCATGGTTCTGGCTTCCAGACATCTC  
TATCCGNCATAGGACTGACCAAGATGGGAACATCCTCCTTCAACAAGCTTNCCTGTTGTGCC  
AAAAATAATAGTGGGATGAAGCAGACCGAGAAGTANCCAGTCCCCCTTTTGCACAAAGC  
NTCATCATGTCTAAATATCAGACATGAGACTTCTTTGGGCAAAAAAGGAGAAAAAGAAAA  
AGCAGTTCAAAGTANCCNCCATCAAGTTGGTTCTTGGCCNTTCAGCACCCGGGCCCCGTT  
ATAAAACACCTNGGGCCGGACCCCCCTT

FIG. 15GG



14\_16475.edit

AGCGTGGTCGCGGCCGAGGTGTTTTATGACGGGGCCGGTGCTGAAGGGCAGGGAACAAC  
TGATGGTGCTACTTTGAACTGCTTTTCTTTCTCTTTTGCACAAAGAGTCTCATGTCTGA  
TATTTAGACATGATGAGCTTTGTGCAAAAGGGGAGCTGGCTACTTCTCGCTCTGCTTCATC  
CCACTATTATTTTGGCACAACAGGAAGCTGTTGAAGGAGGATGTTCCCATCTTGGTCAGTC  
CTATGCGGATAGAGATGTCTGGAAGCCAGAACCATGCCAAATATGTGTCTGTGACTCAGG  
ATCCGTTCTCTGCGATGACATAATATGTGACGATCAAGAATTAGACTGCCCCAACCCAGAA  
ATTCCATTTGGAGAATGTTGTGACGTTTGGCCACAGCCTCCAAGTCTCTACTCGCCCTCC  
TAATGGTCAAGGACCTCAAGGCCCAAGGGAGATCCAGGCCCTCCTGGTATTCTCTGGGAG  
AAATGGTGACCCCTGGTATTCCAGGACAACCAGGGTCCCCTGGTTCTCTGGCCCCCTGGA  
ATCNGGNGAATCATGCCCTACTGGTCTCAAATATTCTCCANATGATTATATGATGTC  
AAGTCTGGGATAGCNAGTANGGANGGACTCGCAGGCTATTCTGGACCANACCTGCCGGG  
GGGCGTTCGAAAGCCCAATCTGCANANTNCTTCACACTGGCGGCCGTGAGCTGCTTT  
AAAAGGGCCATTCCNCCTTTAGNGNGGGGGANTACAATTACTNGCGCGGCTTTANANCG  
CGNGNCTGGGAAAT

15\_16476.edit

AGCGTGGTCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA  
CTGGAATCCATCGGTATGCTCTCGCCGAACCAGACATGCCTCTTGTCTTGGGGTTCTTGC  
TGATGTACCAAGTCTCTCTGGGCCACACTGGGCTGAGTGGGTACACGCAGGTCTCACCAGT  
CTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCCAG  
TACTCTCCAATCTTCCAGTCAGAGTGGCACATCTTGAGGTACGGCAGGTGCGGGCGGGGT  
TCTTGGCGCTGCCCTCTGGGCTCCGGATGTTCTCGATCTGCTGGCTCAGGCTCTTGAGGGT  
GTGTCCACCTCGAGGTACGGTCACGAACCACATTGGCATCATCAGCCCGGTAGTAGCGGC  
CACCATCGTGAGCCTTCTCTTGANGTGGCTGGGGCAGGAAGTGAAGTCGAAACCAGCGCT  
GGGAGGACCAGGGGGACCAANAGGTCCAGGAAGGGCCCGGGGGGACCAACAGGACCAG  
CATCACCAAGTGCGACCCGCGAGAACCTGCCCGGCCGNCCGCTCGAA

16\_16476.edit

TCGAGCGNNCGCCCGGGCAGGTCTCGCGTGCACACTGGTGATGCTGGTCTCTTGGTCCCC  
CCGGCCCTCCTGGACCTCCTGGTCCCCCTGGTCTCCAGCGCTGGTTTCGACTTCAGCTTC  
CTGCCCCAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGAT  
GCCAATGTGGTTTCGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTGAGCCAG  
CAGATCGAGAACATCCGGAGCCAGAGGGCAGCCGCAAGAACCCCGCCCGCACCTGCCGT  
GACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCAA  
GGCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCGTGT  
ACCCCACTCAGCCAGTGTGGCCAGAGAAGAACTGGTACATCAGCAAGAACCCCAAGGACA  
AGAGGCATGTCTGGTTCGGCGAGAGCATGACCGATGGATTCCAGTTCGAGTATGGCGGCC  
AGGGCTCCCAACCTGCCGATGTGGACCTCCGGCCGCGACCAACCTT

FIG. 15HH



17\_16477.edit

TNGAGCGGCCGCCCCGGGCAGGNTGNNAACGCTGGTCCTGCTGGTCCTCTGGCAAGGCTG  
GTGAAGATGGTCACCTGGAAAACCCGGACGACCTGGTGAGAGAGGAGTTGTTGGACCAC  
AGGGTGCTCGTGGTTTCCCTGGAACCTCTGGACTTCTGGCTTCAAAGGCATTAGGGGACA  
CAATGGTCTGGATGGATTGAAGGACAGCCCGGTCTCTGGTGTGAAGGGTGAACCTGG  
TGCCCTGGTGAAAATGGAACCTCCAGGTCAAACAGGAGCCCGTGGGCTTCTGGTGAGAG  
AGGACCGTGTTGGTGCCCTGGCCCANACCTCGGCCCGGACCACGCTAAGCCCGAATTTCC  
AGCACACTGGNGGCCGTTACTANTGGATCCGAGCTCGGTACCAAGCTTGGCGTAATCATG  
GTCATAGCTGTTTCTGNGTGAAATTGTTATCCGCTCACAATTTACACANCATACGAAGC  
CGGAAAGCATAAAGTGTAAGCCTTGGGGTGCTAATGAGTGAGCTAACTCNCATTAAATT  
GCGTTGCGCTCACTGCCCCGCTTTTCCANNNGGAAACCNTGGCNTNGCCNGCTTGCNTTAA  
NTGAAATCCGCCNACCCCCGGGGAAAGNCGGTTTGCNGTATTGGGGCNCTTTTCCCTTT  
CCTCGGNTTACTTGANTTANTGGGCTTTGGNCGNTTCGGGTTGNGGCGANCNGGTTCAACN  
TCACNCCAAAGNGGNAANACGGTTTCCANAAATCCGGGGGNTANCCCAANGNAAAAC  
ATNNGNCNAANGGGCT

18\_16477.edit

AGCGTGTTNGCGCCGAGGTCTGGGCCAGGGGCACCAACAGTCCTCTCTCACCAGGAA  
GCCACAGGGCTCCTGTTTGACCTGGAGTTCCATTTTACCAGGGGCACCAGGTTACCCCTT  
CACACCAGGAGCACCGGGCTGTCCCTTCAATCCATNCAGACCATTGTGNCCCTAATGCCT  
TTGAAGCCAGGAAGTCCAGGAGTTCCAGGGAAACCAACCGAGCACCTGTGGTCCAACAAC  
TCCTCTCTCACCAGGTGCTCCGGGTTTCCAGGGTGACCATCTTCACCAGCCTTGCCAGGA  
GGACCAGCAGGACCAGCGTTACCAACCTGCCCGGGCGGCCGCTCGA

21\_16479.edit

TCGAGCGGCCGCCCCGGGCAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT  
AGTTCACACCATTTGTCATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA  
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTGAGACATTCGTTCCCACTCATCTCCA  
ACGGCATAATGGGAAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAG  
CCTTCGTTGACAGAGTTGCCACGGTAACAACCTTCTCCGAACCTTATGCCTCTGCTGGTC  
TTTCAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCGGCCCGGACC  
ACGCT

22\_16479.edit

AGCGTGGTCCGGCCGAGGTCTCACCAGAGGTGCCACCTACAACATCATAGTGAGGCA  
CTGAAAGACCAGCAGAGGCATAAGGTTCCGGAAGAGGTTGTTACCGTGGGCAACTCTGTC  
AACGAAGGCTTGAAACCAACCTACCGATGACTCGTGCTTTGACCCCTACACAGTTTCCATT  
ATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAAACTGTTGTGCCAGTG  
CTTAGGCTTTGGAAGTGGTCATTTCAAGATGTGATTATCTAGATGGTGCCATGACAAATGG  
TGTGAACTACAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAAATGGACCTGCCCGGG  
CCGGCCGCTCGA

**FIG. 15II**



24\_16480.edit

TCGAGCGNCGCCCGGGCAGGTCCAGTAGTGCCTTCGGGACTGGGTTCACCCCCAGGTCTG  
CGGCAGTTGTCACAGCGCCAGCCCCGCTGGCCTCCAAAGCATGTGCAGGAGCAAATGGCA  
CCGAGATATTCTTCTGCCACTGTTCTCCTACGTGGTATGTCTTCCCATCATCGTAACACGT  
TGCCTCATGAGGGTCACACTTGAATTCTCCTTTTCCGTTCCCAAGACATGTGCAGCTCATTT  
GGCTGGCTCTATAGTTTGGGGAAAGTTTGTGAAACTGTGCCACTGACCTTTACTTCCTCCT  
TCTCTACTGGAGCTTTCGTACCTTCCACTTCTGCTGTTGGTAAATGGTGGATCTTCTATCA  
ATTTCAATTGACAGTACCCACTTCTCCCAACATCCAGGGAAATAGTGATTTAGAGCGATT  
AGGAGAACCAAATTATGGGGCAGAAATAAGGGGCTTTTCCACAGGTTTTCCTTTGGAGGA  
AGATTTAGTGGTGACTTTAAAGAATACTCAACAGTGTCTTCATCCCATAGCAAAAGAA  
GAAACNGTAAATGATGGAANGCTTCTGGAGATGCCNNCATTTAAGGGACNCCCAGAACTT  
CACCATCTACAGGACCTACTTCAGTTTACANNAAGNCACATANTCTGACTCANAAAGGAC  
CCAAGTAGCNCCATGGNCAGCACTTNAAGCCTTTCCTGGGGAAAANNTTACNTTCTTAA  
ANCCTNGGCCNNGACCCCTTAAGNCCAAATTNTGGAAAANTTCNTNCCNCTGGGGGGC  
NGTTCNACATGCNTTTNAAGGGCCCAATTNCCCNCT

25\_16481.edit

TCGAGCGGCGCCCGGGCAGGTGTCGGAGTCCAGCACGGGAGGCGTGGTCTTGTAAGTTGT  
TCTCCGGCTGCCCATTTGCTCTCCCACTCCACGGCGATGTGCTGGGATAGAAGCCTTTGAC  
CAGGCAGGTGAGGCTGACCTGGTTCTTGGTATCTCCTCCCGGGATGGGGGCAGGGTGATC  
ACCTGTGGTTCTCGGGGCTGCCCTTTGGCTTTGGAGATGGTTTTCTCGATGGGGGCTGGGA  
GGGCTTTGTTGGAGACCTTGCACTTGACTCCTTGCCATTGAGCCAGTCTGGTGACAGGAC  
GGTGAGGACGCTGACCACACGCTACGTGCTGTTGTAAGTCTCCTCCCGCGGCTTTGTCTTG  
GCATTATGCACCTCCACGCCGTCCACGTACCAAGTTGAACTTGACCTCAGGGTCTTCGTGGC  
TCACGTCCACCACCACGCATGTAACCTCAGACCTCGGCCGCGACCACGCT

26\_16481.edit

AGCGTGGTCCGGGCCGAGGTCTGAGGTTACATGCGTGGTGGTGGACGTGAGCCACGAAGA  
CCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAA  
GCCGCGGGAGGAGCAGTACAACAGCACGTACCGTGTGGTCAGCGTCTCACCCTCCTGCA  
CCAGGACTGGCTGAATGGCAAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCCAGC  
CCCCATCGAGAAAACCATCTCAAAGCCAAAGGGCAAGCCCCGAGAACACAGGTGTACA  
CCCTGCCCCCATCCCGGGAGGAGATGACCAAGAACCAGGTGAGCCTGACCTGCCTGGTCA  
AAGGCTTCTATCCCAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGCAGCCGGAGAAC  
ACTACAAGACCACGCCTCCCGTGTGGACTCCGACACCTGCCCGGGCGGCCGCTCGA

27\_16482.edit

TCGAGCGGCGCCCGGGCAGGTTGAATGGCTCCTCGCTGACCACCCCGGTGCTGGTGGTGG  
GTACAGAGCTCCGATGGGTGAAACCATGACATAGAGACTGTCCCTGTCCAGGGTGTAGG  
GGCCAGCTCAGTGATGCCGTGGGTGAGCTGGCTCAGCTTCCAGTACAGCCGCTCTCTGTC  
CAGTCCAGGGCTTTTGGGGTCAGGACGATGGGTGCAGACAGCATCCACTCTGGTGGCTGC  
CCCATCCTTCTCAGGCCTGAGCAAGGTGAGTCTGCAACCAGAGTACAGAGAGCTGACACT  
GGTGTCTTGAACAAGGGCATAGCAGACCCTGAAGGACACCTCGGCCGCGACCACGCT

FIG. 15JJ



28\_16482.edit

AGCGTGGTCGCGGCCGAGGTGTCCTTCAGGGTCTGCTTATGCCCTTGTTCAGGAACACCAG  
TGTCAGCTCTCTGTACTCTGGTTGCAGACTGACCTTGCTCAGGCCTGAGAAGGATGGGGCA  
GCCACCAGAGTGGATGCTGTCTGCACCCATCGTCCTGACCCCAAAAGCCCTGGACTGGACA  
GAGAGCGGCTGTACTGGAAGCTGAGCCAGCTGACCCACGGCATCACTGAGCTGGGGCCCT  
ACACCTGGACAGGGACAGTCTCTATGTCAATGGTTTCACCCATCGGAGCTCTGTACCCAC  
CACCAGCACCGGGTGGTCAGCGAGGAGCCATTCAACCTGCCCGGGCGCCGCTCGA

29\_16483.edit

AGCGTGGTCGCGGCCGAGGTCTGTCAGAGTGGCACTGGTAGAAGTTCAGGAACCCCTGA  
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTC  
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGTCTACATTCCGGCGGG  
TATGGTCTTGGCCTATGCCTTATGGGGGTGGCCGTTGTGGGCGGTGTGGTCCGCCTAAAC  
CATGTTCTCAAAGATCATTTGTTGCCCAACACTGGGTTGCTGACCAGAAGTGCCAGGAAG  
CTGAATACCATTTCCAGTGTCTATCCAGGGTGGGTGACGAAAGGGCTCTTTGAACTGTG  
GAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCAGTTGG  
GGAAGCTCGTCTGTCTTTTCCTTCCAATCAGGGGCTCGCTCTTCTGATTATTCTTCAGGGC  
AATGACATAAATTGTATATTCGGTCCCGGTTCCAGGCCAGTAATAGTAGCCTCTGTGACAC  
CAGGGCGGGGCCGAGGGACCCCTTCNTTGAAGAGACCAGCTTCTCATACTTGATGATGA  
GNCCGGTAATCCTGGCACGTGGNGGTTGCATGATNCCACCAAGGAAATNGNGGGGGNG  
GACCTGCCCGGGCCGTTTCAAGGCCAATTCCACACACTTGGNGGCCGTACTATGGATC  
CCACTCNGTCCAACCTTGGNGGAATATGGCATAACTTTT

31\_16484.edit

TCGAGCGGCCGCCCGGGCAGGTCTTGACCTTTTCAGCAAGTGGGAAGGTGTAATCCGTCT  
CCACAGACAAGGCCAGGACTCGTTTGTACCCGTTGATGATAGAATGGGGTACTGATGCAA  
CAGTTGGGTAGCCAATCTGCAGACAGACACTGGCAACATTGCGGACACCCCTCCAGGAAGC  
GAGAATGCAGAGTTTCTCTGTGATATCAAGCACTTCAGGGTTGTAGATGCTGCCATTGTC  
GAACACCTGCTGGATGACCAGCCCAAAGGAGAAGGGGGAGATGTTGAGCATGTTACAGCAG  
CGTGGCTTCGCTGGCTCCCACTTTGTCTCCAGTCTTGATCAGACCTCGGCCGCGACCACGCT

37\_16487.edit

AGCGTGGTCGCGGCCGAGGTCTGTCTACAGTCTCAGGACTCTACTCCCTCAGCAGCGTG  
GTGACCGTGCCCTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGC  
CCAGCAACACCAAGGTGGACAAGAGAGTTGAGCCCAATCTTGTGACAAAACCTCACACAT  
GCCCACCGTGCCAGCACCTGAACTCCTGGGGGGACCGTCAGTCTTCTCTTCCCCCGCAT  
CCCCCTTCAAACCTGCCCGGGCGGCCGCTCG

**FIG. 15KK**



38\_16487.edit

CGAGCGGCCGCCCGGGCAGGTTTGAAGGGGGATGCGGGGAAGAGGAAGACTGACGGT  
CCCCCAGGAGTTCAGGTGCTGGGCACGGTGGGCATGTGTGAGTTTTGTCACAAGATTTGG  
GCTCAACTCTCTTGTCCACCTTGGTGTGCTGGGCTTGTGATCTACGTTGCAGGTGTAGGTC  
TGGGTGCCGAAGTTGCTGGAGGGCACGGTCAACACGCTGCTGAGGGAGTAGAGTCCTGAG  
GACTGTAGGACAGACCTCGGCCGCGACCACGCT

39\_16488.edit

NGGNNGGTCCGGNCNGNCAGGACCACTCNTCTTCGAAATA

41\_16489.edit

AGCGTGGTCGCGGCCGAGGTCCTCACTTGCCTCCTGCAAAGCACCGATAGCTGCGCTCTGG  
AAGCGCAGATCTGTTTTAAAGTCCTGAGCAATTTCTCGCACCAGACGCTGGAAGGGAAGTT  
TGCGAATCAGAAGTTCAGTGGACTTCTGATAACGTCTAATTTACGGAGCGCCACAGTACC  
AGGACCTGCCCCGGCGGCCGCTCGA

42\_16489.edit

TCGAGCGGCCGCCCGGGCAGGTCCTGGTACTGNGGCGCTCCGTGAAATTAGACGTTATCA  
GAAGTCCACTGAACTTCTGATTCGAAAACCTCCCTCCAGCGTCTGGTGGCAGAAAATTGCT  
CAGGACTTTAAACAGATCTGCGCTTCCAGAGCGCAGCTATCGGTGCTTTCAGGAGGCA  
AGTGAGGACCTCGGCCGCGACCACGCT

45\_16491.edit

TCGAGCGGCCGCCCGGGCAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG  
AACTGGAAATCCATCGGTCATGCTCTCGCCGAACCAGACATGCCTCTTGCTCTTGGGGTTCT  
TGCTGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC  
AGTCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC  
CAGTACTCTCCACTCTTCCAGTCAGAGTGGCACATCTTGAGGTACGGCAGGTGCGGGCGG  
GGTTCTTGACCTCGGCCGCGACCACGCT

**FIG. 15LL**



46\_16491.edit

GTGGGNTTGAACCCNTTTNANCTCCGCTTGGTACCGAGCTCGGATCCACTAGTAACGGCCC  
CCAGTGTGCTGGAATTCGGCTTAGCGTGGTCGCGGCCGAGGTCAAGAACCCCGCCCGCAC  
CTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGATTGACCC  
CAACCAAGGTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGAC  
CTGCGTGTACCCCACTCAGCCCACTGTGGUCCAGAAGAACTGGTACATCAGCAAGAACCC  
CAAGGACAAGAGGCATGTCTGGTTCGGCGAGAGCATGACCGATGGATTCCAGTTCGAGTA  
TGGCGGCCAGGGCTCCGACCTGCCGATGTGGACCTGCCCGGGCGGCCGCTCGA

47\_16492.edit

AGCGTGGTCGCGGCCGAGGTCTGGGATGCTCCTGCTGTACAGTGAGATATTACAGGATC  
ACTTACGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCAGTGTGCCTGGGAGCAAG  
TCTACAGCTACCATCAGCGGCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG  
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGCAAGCCAATTTCCATTAAATTACCGAACAG  
AAATTGACAAACCATCCCAGATGCAAGTGACCGATGTTCAAGGACAACAGCATTAGTGCA  
AGTGGCTGCCTTCAAGTTCCTTGTACTGGTTACAGAGTAACCACCACTCCCAAAAATGG  
ACCAGGACCAACAAAACTAAAACCTGCAGGTCCAGATCAAACAGAAATGACTATTGAAG  
GCTTGCAGCCACAGTGGAGTATGTGGTTAAGTGTCTATGCTCAGAATCCAAGCGGAGAG  
AAGTCAGCCTCTGGTTCAGACTGNAAGTAACCAACATTGATCGCCTAAAGGACTGGCATTG  
ACTGATGNGGATGCCGATTCCATCAAAATTGNTTGGGAAAACCCACAGGGGCAAGTTTNC  
ANGTCNAGGNGGACCTACTCGAGCCCTGAGGATGGAATCCTTGACTNTTCTTNNCTGAT  
GGGGAAAAAAACCTTNAAACTTGAAGGACCTGCCCGGGCGGCCGTNCAAAACCCAATT  
CCACCCCTTGGGGGCGTTCTATGGGNCCCACTCGGACCAAACTTGGGGTAAN

48\_16492.edit

TCGAGCGGCCCGCCCGGCGAGGTCTTGCAGCTCTGCAGTGTCTTCTTACCATCAGGTGCA  
GGGAATAGCTCATGGATTCCATCCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAAACTT  
GCCCCGTGGGGCTTTCCCAAGCAATTTTGATGGAATCGGCATCCACATCAGTGAATGCCAG  
TCCTTTAGGGCGATCAATGTTGGTTACTGCAGTCTGAACCAGAGGCTGACTCTCTCCGCTT  
GGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGCCTTCAATAGTCA  
TTTCTGTTTGATCTGGACCTGCAGTTTTAGTTTTTGTGGTCTGGTCCATTTTGGGAGTG  
GTGGTTACTCTGTAACCAGTAACAGGGGAACTTGAAGGCAGCCACTTGACACTAATGCTGT  
TGTCTGAACATCGGTCACTTGCATCTGGGATGGTTTGTCAATTTCTGTTCCGTAATTAATG  
GAAATTGGCTTGCTGCTTGGCGGGCTTGTCTCCACGGCCAGTGACAGCATACACAGTGATG  
GTATAATCAACTCCAGGTTTAAGCCGCTGATGGTAGCTGAACTTTGCTCCAGGCACAAGT  
GAACTCCTGACAGGGCTATTTCTNCTGTTCTCCGTAAGTGATCCTGTAATATCTCACTGGG  
ACAGCAGGANGCATTCAAAACCTTCGGGCGNGACCCCTAAGCCGAATTNTGCAATATNC  
ATCACTGGCGGGCGCTCGANCATTATTAAGGCCCAATCNCCTATAGGGAGTNT  
ANTACAATTNG

**FIG. 15MM**



49\_16493.edit

TCGAGCGGCCGCCCGGGCAGGTCACCTTTTGGTTTTTGGTTCATGTTTCGGTTGGTCAAAGATA  
AAAATAAGTTTGAGAGATGAATGCAAAGGAAAAAATATTTTCAAAGTCCATGTGAAA  
TTGTCTCCCATTTTTTGGCTTTTGAGGGGGTTCAGTTTGGGTGCTTGTCTGTTCCGGGT  
GGGGGAAAAGTTGGTTGGGTGGGAGGGAGCCAGGTTGGGATGGAGGGAGTTTACAGGAA  
GCAGACAGGGCCAACGTCG

55\_16496.edit

AGCGTGGTCGCGGCCGAGGTCCTCACCAGAGGTGCCACCTACAACATCATAGTGGAGGCA  
CTGAAAGACCAGCAGAGGCATAAGGTTTCGGGAAGAGGTTGTTACCGTGGGCAACTCTGTC  
AACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTGACCCCTACACAGTTTCCCAT  
ATGCCGTTGGAGATGAGTGGGAACGAATGCTGAATCAGGCTTTAAACTGTTGTGCCAGTG  
CTTAGGCTTTGGAAGTGGTCATTTAGATGTGATTCTAGATGGTGCCATGACAATGGT  
GTAACTACAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAATGGACCTGCCCGGGC  
GGCCGCTCGA

56\_16496.edit

TCGAGCGGCCGCCCGGGCAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT  
AGTTCACACCATTTGTCATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAA  
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTGACACATTGTTCCCACTCATCTCCA  
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCAGGATCATCCGTAGGTTGGTTCAAG  
CCTTCGTTGACAGAGTTGCCCACGGTAACAACCTCTTCCCGAACCTTATGCCTCTGCTGGTC  
TTTCAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCGGCCGCGACC  
ACGCT

59\_16498.edit

TCGAGCGGCCGCCCGGGCAGGTCCACCATAAGTCCTGATACAACCACGGATGAGCTGTCA  
GGAGCAAGGTTGATTTCTTTTATTGGTCCGGTCTTCTCCTTGGGGGTCAACCGCACTCGATA  
TCCAGTGAGCTGAACATTGGGTGGTGTCCACTGGGCGCTCAGGCTTGTGGGTGTGACCTGA  
GTGAACTTCAGGTCAGTTGGTGCAGGAATAGTGGTTACTGCAGTCTGAACCAGAGGCTGA  
CTCTCTCCGCTTGGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGC  
CTTCAATAGTCATTTCTGTTTGTCTGGACCTGCAGTTTTAGTTTTTGTGGTCTGGTCCAT  
TTTTGGGAGTGGTGGTTACTCTGTAACCAGTAACAGGGGAACCTGAAGGCAGCCACTTGAC  
ACTAATGCTGTTGCTCCTGAACATCGGTCACTTGCATCTGGGATGGTTTGNCAATTTCTGTT  
GGTAATTAATGGAAATTGGCTTGTCTGCTTGGGGGCTGTCTCCACGGCCAGTGACAGCATA  
CACAGNGATGGNATNATCAACTCCAAGTTTAAGGCCCTGATGGTAACTTTAAACTTGTCTC  
CAGCCAGNGAACTTCGGACAGGGTATTTCTTCTGGTTTTCCGAAAGNGANCCTGGAATNN  
TCTCCTTGGANCAGAAGGANCNTCCAAAACCTTGGGCCGGAACCCCTT

CGCGGCCGCCCGGGCAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT

FIG. 15NN



60\_16473.edit

AGCGTGGTCGCGGCCGAGGTCCTGTCTCAGAGTGGCACTGGTAGAAGTTCAGGAACCTGA  
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGTGTC  
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGTCCTACATTCGGCGGG  
TATGGTCTTGGCCTATGCCATTATGGGGGTGGCGGTGTGGCGGGTGGTCCGCCTAAAAC  
CATGTTCTCAAAGATCATTGTGTCCTCAACACTGGGTGCTGACCAGAAAGTGCCAGGAAG  
CTGAATACCATTTCCAGTGTACATCCCAAGGTGGGTGACGAAAGGGGTCTTTGAACTGTG  
GAAGGAACATCCAAGATCTCTGGTCCATGAAGATTGGGGTGTGGAAGGGTTACCAGTTGG  
GGAAGCTCGTCTGTCTTTTCTTCCAATCAGGGGCTCGCTCTTCTGATTATTCTTCAGGGC  
AATGACATAAATTGTATATTCTGGTTCCCGGTTCCAGGCCAGTAATAGTAGCCTCTTGTGAC  
ACCAGGCGGGGCCANGGACCACTTCTCTGGGANGAGACCCAGCTTCTCATACTTGATGAT  
GTAACCCGGTAATCTGACGTGGCGGGCTGNATGATACCANCAAGGAATTGGGTGNGGN  
GGACCTGCCCGGGGCCCTCNA

60\_16498.edit

AGCGTGGTCGCGGCCGAGGTCCTGGGATGCTCCTGCTGCACAGTGAGATATTACAGGATC  
ACTTACGGAGAAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCAGTGTGCCTGGGAGCAAG  
TCTACAGCTACCATCAGCGGCCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG  
TCACTGGCGGTGGAGACAGCCCGCAAGCAGCAAGCCAATTTCCATTAATTACCGAACAG  
AAATTGACAAACCATCCAGATGCAAGTGACCGATGTTCAAGGACAACAGCATTAGTGTC  
AGTGGCTGCCTTCAAGTTCCCTGTTACTGGTTACAGAGTAACCACCACTCCCAAAAATGG  
ACCAGGACCAAAAACTAAAAGTGCAGGTCCAGATCAAAACAGAAATGACTATTGAAG  
GCTTGCAGCCACAGTGGAGTATGTGGTTAGTGTCTATGCTCAGAATCCAAGCGGAGAGA  
GTCAGCCTCTGGTTCAGACTGCAGTAACCACTATTCTGCACCAACTGACCTGAAGTTCAC  
TCAGGTACACCCACAAGCCTGAGCCGCCAGTGGACACCACCCAATGTTCACTCACTGGAT  
ATCGAGTGGGGTGACCCCCAAGGAGAAGACCCGACCCATGAAAGAAATCAACCTTGCT  
CCTGACAGCTCATCCGNGGGGTGATCAGGACTTATGGGGGACTGCCCGGCGNGCCGNTC  
GAAANCGAATTNTGAAATTCCTTCNCACTGGGNGGCGNTTCGAGCTTNTCTINTANANGGC  
CCAATTNCCTNTAGNGGGTCGTN

61\_16499.edit

AGCGTGGTCGCGGCCGAGGTCNAGGA

62\_16483.edit

TCGAGCGGCCCGCCGGGCGAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCGC  
CACGTGCCAGGATTACCGGCTACATCAAGTATGAGAAGCCTGGGTCTCCTCCAGAGA  
AGTGGTCCCTCGGCCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGA  
ACCGAATATACAATTTATGTCAATTGCCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTG  
GAAGGAAAAAGACAGACGAGCTTCCCAACTGGTAACCCTTCCACACCCAATCTTCATG  
GACCAGAGATCTTGGATGTTCTTCCACAGTTCAAAAGACCCCTTTCGTACCCACCCCTGG  
GTATGACACTGGAAATGGTATTGAGCTTCTGGCACTTCTGGTCAGCAACCCAGTGTGGG  
CAACAAATGATCTTTGAGGAACATGGTTTTAGGCGGACCACACCGCCACAAACGGGCACC  
CCCATAGGNAAGGCAAGACCATACCCGCGGAATGTAGGACAAGAAGCTCTNTCTCA  
ACAACCATCTCATGGGCCCCATTCAGGACACTTCTGAGTACATCTTCATGTCATCTG  
GTGGGCACTTGATGAANAACCCCTTACAGTTCAGGGTTCCTGGAACCTTACCAGNGCCACT  
TCTGACAGGANCTTGGGCGNGACCACT

FIG. 1500



63\_16500.edit

AGCGTGGTCGCGGCCGAGGTCCATTTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGTAG  
TTCACACCATTGTCATGGCACCATCTAGATGAATCACATCTGAAATGACCACTTCCAAAGC  
CTAAGCACTGGCACAACAGTTTAAAGCCTGATTCAGACATTTCGTTCCCACTCATCTCCAAC  
GGCATAATGGGAAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTTCAAGCC  
TTCGTTGACAGAGTTGCCACGGTAACAACCTCTTCCCGAACCTTATGCCTCTGCTGGTCTT  
TCAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTGCCCGGGCGGCC  
GCTCGA

64\_16493.edit

AGCGTGGTCGCGGCCGAGGTGTGCCCCAGACCAGGAATTCGGCTTCGACGTTGGCCCTGTC  
TGCTTCCTGTAAACTCCCTCCATCCCAACCTGGCTCCCTCCACCCAACCAACTTCCCCC  
AACC CGGAAACAGACAAGCAACCCAACTGAACCCCTCAAAAGCCAAAAAATGGGAG  
ACAATTTACATGGACTTTGGAAAATATTTTTTCCTTTGCAATCATCTCTCAAAGTTAGTT  
TTATCTTTGACCAACCGAACATGACCAAAAACAAAAGTGACCTGCCCGGGCGGCCGCTC  
GA

64\_16500.edit

TCGAGCGGCCGCCCGGGCAGGTCTCACCAGAGGTGCCACCTACAACATCATAGTGGAGG  
CACTGAAAGACCAGCAGAGGCATAAGGTTCGGGAAGAGGTTGTTACCGTGGGCAACTCTG  
TCAACGAAGGCTTGAACCAACCTACGGATGACTCGTGCTTTGACCCCTACACAGTTTCCA  
TTATGCCGTTGGAGATGAGTGGGAACGAATGTCTGAATCAGGCTTTAACTGTTGTGCCAG  
TGCTTAGGCTTTGGAAGTGGTCATTTAGATGTGATTCATCTAGATGGTGCCATGACAATG  
GTGTGAAC TACAAGATTGGAGAGAAGTGGGACCGTCAGGGAGAAAATGGACCTCGGCCG  
CGACCACGCT

63\_16500.edit

**FIG. 15PP**



16501.edit

TCGAGCGGCGCCCGGGCAGGTACCGGGGTGGTCAGCGAGGAGCCATTCACTGAACCTT  
CACCATCAACAACCTGCGGTATGAGGAGAACATGCAGCACCTGGCTCCAGGAAGTTCAA  
CACCACGGAGAGGGTCCTTCAGGGCCTGCTCAGGTCCCTGTTCAAGAGCACCACTGTTGGC  
CCTCTGTAAGTCTGGCTGCAGACTGACTTTGCTCAGACCTGAGAAACATGGGGCAGCCACTG  
GAGTGGACGCCATCTGCACCCTCCGCCTTGATCCCACTGGTNCCTGGACTGGACANANAGCG  
GCTATACTTGGGAGCTGANCCNAACCTTTGGCGGNGACNCCNCTT

16501.2.edit

GAGGACTGGCTCAGCTCCCAGTATAGCCGCTCTCTGTCCAGTCCAGGACCAGTGGGATCAA  
GGCGGAGGGTGCAGATGGCGTCCACTCCAGTGGCTGCCCCATGTTTCTCAAGTCTGAGCAA  
AGNCAGTCTGCAGCCAGGTACAGAGGGCCAACACTGGTGTCTTGAACAGGGACCTGAG  
CAGGCCCTGAAGGACCCTCTCCGTGGTGTGAACCTCCTGGAGCCAGGGTGTGATGTTT  
TCTCATACCGCAGGTTGTTGATGGTGAAGTTCACTGTGAATGGCTCCTCGCTGACCACCC

16502.1.edit

AGCGTGGTCGCGGCGAGGTCCACCACCCAATTCCTTGTGGTATCATGGCAGCCGCCA  
CGTGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCCAGAGAA  
GTGGTCCCTCGGCCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCCTGGAACCGGGAA  
CCGAATATACAATTTATGTCATTGCCCTGAAGAATAATCAGAAGAGCGAGCCCTGATTGG  
AAGGAAAAAGACAGACGAGCTTCCCAACTGGTAACCCTTCCACACCCCAATCTTCATGG  
ACCANANANCTTGGATNGTCTTTACNNGGTTAAAAAACCCCTTTTCGCCCCCCCACCTTG  
GGGATTAACCTTGGGAAANGGGGATTTNACCNTTCC

16502.2.edit

TCGAGCGGCGCCCGGGCAGGTCTGTCAGAGTGGCACTGGTAGAAGTTCCAGGAACCTT  
GAACTGTAAGGGTCTTTCATCAGTGCCAACAGGATGACATGAAATGATGTAAGTCTCAGAAGT  
GTCCTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGTCTACATTCCGC  
GGGTATGGTCTTGGCCTATGCCTTATGGGGGTGGCCGTTGTGGGCGGTGTGGTCCGCCTAA  
AACCATGTTCTCAAAGATCATTTGTTGCCCAACACTGGGTTGCTGACCAGAAAGTCCAGG  
AAGCTGAATACCATTTCCAGTGTATACCCAGGGNGGGTGACCAAAGGGGGTCNTTNGA  
CCTGGNGAAAGGAACCATCCAAAANCTCTGNCCCATG



16503.1.edit

AGCGTGGNCGCGGCCGAGGTCTGAGGATGTAACTCTTCCCAGGGGAAGGCTGAAGTGCT  
GACCATGGTGCTACTGGGTCTTCTGAGTCAGATATGTGACTGATGNGAACTGAAGTAGGT  
ACTGTAGATGGTGAAGTCTGGGTGTCCCTAAATGCTGCATCTCCAGAGCCTTCCATCATT  
CCGTTTCTCTTTTGCTATGGGATGAGACACTGTTGAGTATTCTCTAAAGTCACCACTGAAA  
TCTTCTCCAAAGGAAAACCTGTGGAAAAGCCCCATTATTCTGCCCCATAATTGGTCTCTCC  
TAATCNCCTCTGAAATCACTATTTCCCTGGAANGTTTGGGAAAAANNGGGCNACCTGNCAN  
TGGAAANTGGATANAAAGATCCCACCATTTTACCCAACNAGCAGAAAGTGGGAANGGTAC  
CGAAAAGCTCCAAGTAANAAAAAGGAGGGAAGTAAAGGTCAAGTGGGCACCAAGTTTCAA  
ACAAAACCTTCCCCAACTATANAACCCA

16503.2.edit

AAGCGGCCGCCCGGGCAGGNNCAGNAGTGCCCTTCGGGACTGGGNTCACCCCCAGGTCTGC  
GGCAGTTGTACAGCGCCAGCCCCGCTGGCCTCCAAAGCATGTGCAGGAGCAAATGGCAC  
CGAGATATTCCTTCTGCCACTGTTCTCTACGTGGTATGTCTTCCCATCATCGTAACACGTT  
GCCTCATGAGGGTCACACTTGAATTCTCCTTTTCCGTTCCCAAGACATGTGCAGCTCATTTG  
GCTGGCTCTATAGTTTGGGGAAAGTTTGTGAACTGTGCCACTGACCTTTACTTCTCCTT  
CTCTACTGGAGCTTTCCGTACCTTCCACTTCTGCTGNTGGNAAAAAGGGNGGAACNTCTTA  
TCAATTTCAATGGACAGTANCCNCNTTCTNCCCCAAACATNCAAGGGAAAAATATTGATTN  
CNAGAGCGGATTAAGGAACAACCCNAATTATGGGGGCCAGAAATAAAGGGGGCTTTTCCA  
CAGGTNTTTTCT

16504.1.edit

TCGAGCGGCCGCCCGGGCAGGTCTGCAGGCTATTGTAAGTGTCTGAGCACATATGAGAT  
AACCTGGGCCAAAGCTATGATGTTGATACGTTAGGTGTATTAATGCACTTTTGACTGCCA  
TCTCAGTGGATGACAGCCTTCTCACTGACAGCAGAGATCTTCTCACTGTGCCAGTGGGCA  
GGAGAAAGAGCATGCTGCGACTGGACCTCGGCCGCGACCAAGCT

16504.2.edit

AGCGTGGTTCGCGGCCGAGGTCCAGTCGCAGCATGCTCTTCTCTGCCCCACTGGCACAGTG  
AGGAAGATCTCTGCTGTCAAGTGAAGGCTGTATCCACTGAGATGGCAGTCAAAAGTGC  
ATTTAATACACCTAACGTATCGAACATCATAGCTTGGCCCAGGTTATCTCATATGTGCTCA  
GAACACTTACAATAGCCTGCAGACCTGCCCGGGCGGCCGCTCGA

**FIG. 15RR**



16505.1.edit

CGAGCGGCCGCCCGGGCAGGTCCAGACTCCAATCCAGAGAACCACCAAGCCAGATGTCAG  
AAGTACACCATCACAGGTTTACAACCAGGCACTGACTACAAGATCTACCTGTACACCTTG  
AATGACAATGCTCGGAGCTCCCCTGTGGTCATCGACGCCTCCACTGCCATTGATGCACCAT  
CCAACCTGCGTTTCCTGGCCACCACACCAATTCCCTTGCTGGTATCATGGCAGCCGCCACG  
TGCCAGGATTACCGGCTACATCATCAAGTATGAGAAGCCTGGGTCTCCTCCCAAGAAAGT  
GGTCCCTCGGCCCGCCCTGGTGNACAGAAGCTACTATTACTGGCCTGGAACCGGGAACC  
GAATATACAATTTATGTCATTGCCCTGAAGAATAATCANAAGAGCGAGCCCCTGATTGGA  
AGG

16505.2.edit

AGCGTGGTCGCGGCCGAGGTCTGTCAAGTGGCACTGGTAGAAGTTCAGGAACCCTGA  
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTAATCAGAAAGTGC  
CTGGAATGGGGCCCATGAGATGGTTGTCTGAGAGAGAGCTTCTTGCTCTGTCTTTTCCTTC  
CAATCAGGGGCTCGCTCTTCTGATTATCTTCAGGGCAATGACATAAAATTGTATATTCCGGTT  
CCCGGTTCCAGGCCAGTAATAGTAGCCTCTGTGACACCAGGGCGGGGCGGAGGGACCACT  
TCTCTGGGAGGAGACCCAGGCTTCTCATCTTGTATGATGTANCCGGTAATCCTGGCACCGT  
GGCGGCTGCCATGATACCAGCAAGGAATTGGGTGTGGTGGCCAAGAAACGCAGGTTGGAT  
GGTGCATCAATGGCAGTGGAGGCGTCGATNACCACAGGGGAGCTCCGANCAATTGTCATTC  
AAGGTGGACAGGTAGAATCTTGTAAATCAGGTGCCTGGTTTGTAAACCTG

16506.1.edit

TCGAGCGGCCGCCCGGGCAGGTTTCGTGACCGTGACCTCGAGGTGGACACCACCTCAAG  
AGCCTGAGCCAGCAGATCGAGAACATCCGGAGCCCAGAGGGCAGCCGCAAGAACCCCGC  
CCGACCTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGAT  
TGACCCCAACCAAGGCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGT  
GAGACCTGCGTGTACCCCACTCAGCCCAAGTGTGGCCCAAGAACTGGTACATCAGCAAG  
AACCCCAAGGACAAGAAGCATGTCTGGTTCGGCGAAAGCATGACCGATGGATTCCAGTTC  
GAGTATGGCGGCCAGGGCTCCGACCCTGCCGATGTGGACCTCGGCCGCGACCACGCTAAG  
CCCGAATTCAGCACACTGGCGGCCGTTACTAGTGGGATCCGAGCTTCGGTACCAAGCTTG  
GCGTAATCATGGGNCATAGCTGTTCTGNGTGAAAATGGTATTCCGCTTCACAATTTCCC  
AC

16506.2.edit

AGCGTGGTCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA  
CTGGAATCCATCGGTATGCTCTCGCCGAACCAGACATGCCTCTGTCTTGGGGTTCTTGC  
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACCAGT  
CTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCCAG  
TACTCTCCACTCTTCCAGTCAGAGTGGCACATCTTGAGGTCACGGCAGGTGCGGGCGGGGT  
TCTTGCGGCTGCCCTCTGGGCTCCGGATGTTCTCGATCTGCTGGCTCAAGCTCTTGAAGGGT  
GGTGTCCACCTCGAGGTACGGTACGAAACCTGCCCCGGCGGCGGCTCGA



16507.1.edit

AGCGTGGTCGCGGCCGAGGTCAAGAACCCCGCCGCACCTGCCGTGACCTCAAGATGTGC  
CACTCTGACTGGAAGAGTGGAGAGTACTGGATTGACCCCAACCAAGGCTGCAACCTGGAT  
GCCATCAAAGTCTTCTGCAACATGGAGACTGGTGAGACCTGCGTGTACCCCACTCAGCCCA  
GTGTGCCCCAGAAGAACTGGTACATCAGCAAGAACCCCAAGGACAAGAGGCATGTCTGGT  
TCGGCGAGAGCATGACCGATGGATTCCAGTTCGAGTATGGCGGCCAGGGCTCCGACCCCTG  
CCGATGTGGACCTGCCCGNGCCGGNCCGCTCGAAAAGCCCAATTTCCAGNCACACTTGG  
CCGCGCGTTACTACTG

16507.2.edit

TCGAGCGGCCGCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG  
AACTGGAATCCAATCGGTCATGCTCTCGCCGAACCAGACATGCCTCTTGTCTTGGGGTTCT  
TGCTGATGTACCAGTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTCACC  
AGTCTCCATGTTGCAGAAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATC  
CAGTACTCTCCACTCTTCCAGTCAGAGTGGCACATCTTGAGGTCACGGCAGGTGCGGGCGG  
GGTCTTGACCTCGGCCGCGACACGCT

16508.1.edit

CGAGCGGCCGCGCGGCCGAGGTCCCCCCCCCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT  
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTT

16508.2.edit

AGCGTGGTCGCGGCCGAGGTCTGGCATTCTTCGACTCTCTCCAGCCGAGCTTCCCAGAA  
CATCACATATCACTGCAAAAAATAGCATTGCATACATGGATCAGGCCAGTGGAATGTAAA  
GAAGGCCCTGAAGCTGATGGGGTCAAATGAAGGTGAATTCAAGGCTGAAGGAAATAGCA  
AATTCACCTACACAGTCTTGGAGGATGGTTGCACGAAACACACTGGGGAATGGAGCAAAA  
CAGTCTTTGAATATCGAACACGCAAGGCTGTGAGACTACCTATTGTAGATATTGCACCCTA  
TGACATTGGTGGTCTGATCAAGAAATTTGGTGTGGACGTTGGCCCTGTTTGCTTTTATAAA  
CCAAACTCTATCTGAAATCCCAACAAAAAAATTTAACTCCATATGTGNTCCTCTTGTCT  
AATCTTGGCAACCAGTGCAAGTGACCGACAAAATTCAGTTATTTATTTCCAAAATGTTTG  
GAAACAGTATAATTTGACAAAGAAAAAGGATACTTCTCTTTTTTGGCTGGTCCACCAAA  
TACAATTCAAAGGCTTTTGGTTTTTATTTTTTTANCCAATTCCAATTTCAAATGTCTCAA  
TGGNGCTTATAA!AAAATAAACTTTCACCCTTNTTTTNTGAT



16509.1.edit

AGCGTGGTCGCGGCCGAGGTCTGGGATGCTCCTGCTGTACAGTGAGATATTACAGGATC  
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG  
TCTACAGCTACCATCAGCGGCCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG  
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGCAAGCCAATTTCCATTAATTACCGAACAG  
AAATTGACAAACCATCCCAGATGCAAGTGACCGATGTTTCAGGACAACAGCATTAGTGTCA  
AGTGGCTGCCTTCAAGTTCCTCTGTTACTGGTTACAGAAGTAACCACCACTCCCAAAAATG  
GACCAGGACCAACAAAACTAAAACTGCAGGTCCAGATCAAACAGAAAATGGACTATTG  
AAGGCTTGACGCCACAGTGGAAGTATGTGGNTAGGNGTCTATGCTCAGAATCCCAAGCC  
GGAGAAAGTCAGCCTTCTGGTTTAGACTGCAGTAACCAACATTGATCGCCCTAAAGGACT  
GGNCATTCACTTGGATGGTGGATGTCCAATTC

16509.2.edit

TCGAGCGGCCGCCCGGGCAGGTCTTGCAGCTCTGCAGNGTCTTCTTCACCATCAGGTGCA  
GGGAATAGCTCATGGATTCCATCCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAACTT  
GCCCCTGTGGGCTTTCCCAAGCAATTTTGATGGAATCGACATCCACATCAGNGAATGCCAG  
TCCTTTAGGGCGATCAATGTTGGTTACTGCAGTCTGAACCAGAGGCTGACTCTCTCCGCTT  
GGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGCCTTCAATAGTCA  
TTTCTGTTTGATCTGGACCTGCAGTTTAAAGTTTTGGTGGTCTGNCCCATTTTGGGAAG  
TGGGGGGTTACTCTGTAACCAAGTAACAGGGGAACTTGAAGGCAGCCACTTGACACTAATG  
CTGTTGCTCTGAACATCGGTCACTTGCATCTGGGGATGGTTTTGACAATTTCTGGTTCGGCA  
AATTAATGGAAATTGGCTTGCTGCTTGGCGGGGCTGNCTCCACGGGCCAGTGACAGCATA  
C

16510.1.edit

TCGAGCGGCCGCCCGGGCAGGTCTTGCAGCTCTGCAGTGTCTTCTTCACCATCAGGTGCA  
GGGAATAGCTCATGGATTCCATCCTCAGGGCTCGAGTAGGTACCCCTGTACCTGGAACTT  
GCCCCTGTGGGCTTTCCCAAGCAATTTTGATGGAATCGACATCCACATCAGTGAATGCCAG  
TCCTTTAGGGCGATCAATGTTGGTTACTGCAGTCTGAACCAGAGGCTGACTCTCTCCGCTT  
GGATTCTGAGCATAGACACTAACCACATACTCCACTGTGGGCTGCAAGCCTTCAATAGTCA  
TTTCTGTTTGATCTGGACCTGCAGTTTAAAGTTTTGTTGGNCTGNCCCATTTTGGGGAA  
GGGGTGGTTACTCTTGTAAACCAAGTAACAGGGGAACTTGAAGCAGCCACTTGACACTAATG  
CTGGTGGCCTGAACATCGGTCACTTGCACTGCGGATGGTTTGGTCAATTTCTGTTCCGTAAT  
TAATGGGAAATTGGCTTACTGGCTTGCGGGGGCTGTCTCCACGGNCAGTGACAAGCATA  
ACAGGNGATGGGTATAATCAACTCCAGGTTTAAAGCCNCTGATGGTA

16510.2.edit

AGCGTGGTCGCGGCCGAGGTCTGGGATGCTCCTGCTGTACAGTGAGATATTACAGGATC  
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG  
TCTACAGCTACCATCAGCGGCCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG  
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGTAAGCCAATTTCCATTAATTACCGAACAG  
AAATTGACAAACCATCCCAGATGCAAGTGACCGATGTTTCAGGACAACAGCATTAGTGTCA  
AGTGGCTGCCTTCAAGTTCCTCTGTTACTGGTTACAGAGTAACCACCACTCCCAAAAATGG  
GACCAGGACCAACAAAACTAAAACTGCANGGTCCAGATCAAACAGAAAATGACTATTG  
AAGGCTTGACGCCACAGTGGAAGTATGTGGGTTAGTGTCTATGCTCAGAATNCCAAGCGG  
AGAGAGTCAGCCTCTGGTTCAGACT

FIG. 15UU



16511.1.edit

TCGAGCGGCCGCCGGGCAGGTCAGCGCTCTCAGGACGTCACCACCATGGCCTGGGCTCT  
GCTCCTCCTACCTCCTCACTCAGGGACAGGGTCTGGGCCAGTCTGCCCTGACTCAG  
CCTCCTCCTCGCGTCCGGGTCTCCTGGACAGTCAGTCACCATCTCCTGCACTGGAACAGCA  
GTGACGTTGGTGCTTATGAATTGTCTCCTGGTACCAACAACACCCAGGCAAGGCCCCAA  
ACTCATGATTTCTGAGGTCACTAAGCGGCCCTCAGGGTCCCTGATCGCTTCTCTGGCTCC  
AAGTCTGGCAACACGGCCTCCCTGACCGTCTCTGGGCTCCANGCTGAGGATGANGCTGATT  
ATTACTGGAAGCTCATATGCAGGCAACAACAATTGGGTGTTTCGGCGGAAGGGACCAAGCT  
GACCGTNTCAAGGTCAAGCCCAAGGCTTGCCCCCTCGGTCACTCTGTTCCACCTCCTCT  
GAAGAAGCTTTCAAGCCAACAANGNCACACTGGGTGTGTCTATAAGTGGACTTTCTACCC

16511.2.edit

AGCGTGGTCGCGGCCGAGGTCTGTAGCTTCTGTGGGACTTCCACTGCTCAGGCGTCAGGCT  
CAGGTAGCTGCTGGCCGCGTACTTGTGTGCTTTGNTTGGAGGGTGTGGTGGTCTCCACT  
CCCGCTTGACGGGGCTGCTATCTGCCTTCCAGGCCACTGTCACGGCTCCCGGTAGAACT  
CACTTATGAGACACACAGTGTGGCCTTGTGGCTTGAAGCTCCTCAGAGGAGGGTGGGA  
ACAGAGTGACCGAGGGGCGAGCCTTGGGCTGACCTAGGACGGTCAGCTTGGTCCCTCCGC  
CGAACACCCAATTGTGTGCTGTCATATGAGCTGCAGTAATAATCAGCCTCATCTCAGC  
CTGGAGCCCAAGACNGTCAAGGGAGGCCCGTGTGGCAAGACTTGAAGCCAGANAAG  
CGATCAGGGACCCCTGAGGGCCGCTTACNGACCTCAAAAAATCATGAATTTGGGGGGCC  
TTGCGCTGGGNGTTGGTTGGTNACCAAGNAAAACAAAATTTCTATAAAGCACCAACGCTCACT  
GCTGGTTTCCAGTGCANGAANATGGTGAAGTGAANTGTCC

16512.1.edit

AGCGTGGTCGCGGCCGAGGTCCAGCATCAGGAGCCCCGCTTGGCGGCTCTGGTCATCGCC  
TTTCTTTTGTGGCCTGAAACGATGTATCAATTCGAGTAGCAGAACTGCCGTCTCCACTG  
CTGTCTTATAAGTCTGCAGCTTCACAGCCAATGGCTCCCATATGCCAGTTCCTTCATGTCC  
ACCAAAGTACCCGTCTCACCATTACACCCAGGTCTCACAGTTCTCCTGGGTGTGCTTGG  
CCCGAAGGGAGGTAAGTANACGGATGGTGCTGGTCCACAGTTCTGGATCAGGGTACGAG  
GAATGACCTCTAGGGCCTGGGCNACAAGCCCTGTATGGACCTGCCCCGGCGGGCCGCTC  
GA

16512.2.edit

TCGAGCGGCCGCCGGGCAGGTCCATACAGGGCTGTTGCCAGGCCCTAGAGGNCAATTC  
TTGTACCCTGATCCAGAACTGTGGGACCAACCATCCGTCTACTTACCTCCCTTCGGGCC  
AAGCACACCCAGGAGAACTGTGAGACCTGGGGTGTAATGGNGAGACGGGTACTTTGGTG  
GACATGAAGGAACTGGGCATATGGGAGCCATTGGCTGNGAAGCTGCANACTTATAAGACA  
GCAGTGGAGACGGCAGTTCTGCTACTGCGAATTGATGACATCGTTTCAGGCCACAAAAG  
AAAGGCGATGACCANAGCCGGCAAGGCGGGCTTCTGATGCTGGACCTCGGCCGCGGAC  
CACGCTT

FIG. 15VV



16514.1.edit

AGCGTGGTCGCGGCCGAGGTCCACTAGAGGTCTGTGTGCCATTGCCCAGGCAGAGTCTCTG  
CGTTACAAACTCTTAGGAGGGCTTGCTGTGCGGAGGGCTGCTATGGTGTGCTGCGGTTCA  
TCATGGAGAGTGGGGCCAAAGGCTGCCAGGTTGTGGTGTCTGGGAACTCCGAGGACAGA  
GGGCTAAATCCATGAAGTTTGTGGATGGCTGATGATCCACAGCGGAGACCTGTAACTA  
CTACGTTGACACTGCTGTGCGCCACGTGTTGCTCANACAGGGTGIGCTGGGCATCAAGGTG  
AAGATCATGCTGCCCTGGGACCCANCTGGCAAAAATGGCCCTTAAAAACCCCTTGCCNTG  
ACCACGTGAACCATTTGTGNGAACCCCAAGATGAANATACTTGCCCACCACCCCCATTTC

16514.2.edit

TCGAGCGGCCGCCCGGGCAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGGACTGGCTG  
GGGCATGGCAGGCGGCTCTGGCTTCCACCCCTTCTGTTCTGAGATGGGGTGGTGGGCAGT  
ATCTCATCTTTGGGTTCCACAATGCTCACGTGGTCAGGCAGGGGCTTCTTAGGGCCAATCT  
TACCAGTTGGGTCCAGGGCAGCATGATCTTACCTTGATGCCCAGCACACCCTGTCTGAG  
CAACACGTGGCGCACAGCAGTGTCAACGTAGTAGTTAACAGGGTCTCCGCTGTGGATCAT  
CAGGCCATCCACAACTTTCATGGATTTAGCCCTCTGTCTCGGAGTTTCCCAAAACACCAC  
AACCTCGCCAGCCTTTGGGCCCCACTTCTCATGAATGAAACCGCAGCACACCATTANCAA  
GGCCCTTCCGCACAGGNAAGCCCTTCTTAAGGAGTTTGTAAACGCAAAAAACTCTTGCCCT  
GGGCAAAATGGGCACACAGACCTNTANTNGGACCTTGGNCCGGAACCACCGCTT

16515.1.edit

AGCGTGGTCGCGGCCGAGGTCTGGCCCTCCTGGCAAGGCTGGTGAAGATGGTCACCCTGG  
AAAACCCGGACGACCTGGTGAGAGAGGAGTTGTTGGACCACAGGGTGCTCGTGGTTTCCC  
TGGAACCTCTGGACTTCTGGCTTCAAAGGCATTAGGGGACACAATGGTCTGGATGGATTG  
AAGGGACAGCCCGGTCTCTGGTGTGAAGGGTGAACCTGGNGCCCTGGTGAATGGA  
ACTCCAGGTCAAACAGGAGCCCGNGGGCTTCTGGNGAGAGAGGACGTGTTGGTGGCCCT  
GGCCANACCTGCCCGGGCGCGCTCNAAGCCGAAATCCAGNACACTGGCGGCCGNT  
ACTANTGGAATCCGAACCTTCGGTACCAAAGCTTGGCCGTAATCATGGCCATAGCTTGTTC  
CTGGGGNGGAAATTTGGTATTCGGCTNCCAAATCCACACAACATACCGAACCCGGAAGCA  
TTAAAGTGTAAGCCCTGGGGGGGCTAAATGANGTGAGCNTAACTCNCATTTAATTGG  
CGTTGCGCTTCACTGCCCCGCTTTCCAGTCCGGGNA

16515.2.edit

TCGAGCGGCCGCCCGGGCAGGTCTGGGCCAGGGGCACCAACACGTCCTCTCTACCAGGA  
AGCCACGGGCTCCTGTTTGACCTGGAGTTCCATTTTACCAGGGGCACAGGTTACCCT  
TCACACCAGGAGCACCGGGCTGTCCCTTCAATCCATCCAGACCATTTGTGNCCCTAATGCC  
TTTGAAGCCAGGAAGTCCAGGAGTTCCAGGGAACCACGAGCACCTGTGGTCCAACAAC  
TCCTCTCTACCAGGTCGTCCGGGTTTTCAGGGTGACCATCTTACCAGCCTTGCCAGGA  
GGGCCAGACCTCGGCCGCGACACGCT

FIG. 15WW



16516.1.edit

ANCGTGGTCGCGGCCGAGGTCCTCACCAGAGGTGNCACCTACAACATCATAGTGGAGGCA  
CTGAAAGACCANCAGAGGCATAAGGTTTCGGGAAGAGG

16516.2.edit

TCGAGCGGGCCCGGGCAGGTCCATTTCTCCCTGACGGTCCCACTTCTCTCCAATCTTGT  
AGTTCACACCATTGTCTATGGCACCATTAGATGAATCACATCTGAAATGACCACTTCCAAA  
GCCTAAGCACTGGCACAACAGTTTAAAGCCTGATTAGACATTTCGTTCCCACTCATCTCCA  
ACGGCATAATGGGAACTGTGTAGGGGTCAAAGCACGAGTCATCCGTAGGTTGGTCAAG  
CCTTCGTTGACAGAGTTGTCCACGGTAACAACCTTTCGGAACCTTATGCCTCTGCTGGTC  
TTTCAGTGCCTCCACTATGATGTTGTAGGTGGCACCTCTGGTGAGGACCTCNGNCCNGAAC  
AACGCTTAAGCCCGNATTCTGCAGAATAATCCCATCACACTTGGCGGCCGCTTCGANCATG  
CATCNTAAAAGGGGGCCCAATTTCCCTTATAAGNGAANCCGTATTNCCAATTTCACTG  
GNCCCCCGNTTTTACAAACGNCGGTGAAGTGGGGAAAAACCTGGCGGTTACCCAATT  
TAATCGCCNTTGGCAGCACAATCCCCCTTTTCGNCCANCNTGGGCGTAAATAACCGAAAA

16517.1.edit

ANCGNGGTGCGGGCCGANGTNTTTTTCTTNTTTTTT

16518.1.edit

AGCGTGGTCGCGGCCGAGGTCTGAGGTTACATGCGTGGTGGTGACGTGAGCCACGAAGA  
CCCTGAGGTCAAGTTCAACTGGTACGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAA  
GCCGCGGGAGGAGCAGTACAACAGCACGTACCGGNGGTGAGCGTCCTCACCGTCTGCA  
CCAGAATTGGTTGAATGGCAAGGAGTACAAGNGCAAGGTTTCCAACAAAGCCNTCCACG  
CCCCNTCGAAAAAACCATTTCCAAAGCCAAAGGGCAGCCCCGAGAACCACAGGTGTACAC  
CCTGCCCCCATCCCCGGAGGAAAAGANCAANAACCNGGTTGAGCCTTAAGTTGCTTGGTC  
NAANGCTTTTATCCCAACGNACTTCCCCNTGGAANTGGGAAAAACCAATGGGCCAANC  
CGAAAAACAATTACAANAACCCC

16518.2.edit

TCGAGCGGCCCGGGCAGGTGTGCGAGTCCAGCACGGGAGGCGTGGTCTTGTAGTTGT  
TCTCCGGCTGCCATTGCTCTCCCACTCCACGGCGATGTCGCTGGGATAGAAGCCTTGAC  
CAGGCAGGTGAGGCTGACCTGGTCTTGGTCTCTCTCCCGGATGGGGGCAGGGTGAA  
CACCTGGGGTTCTCGGGGCTTGCCCTTTGGTTTTGAANATGGTTTTCTCGATGGGGGCTGG  
AAGGGCTTTGTTGNAAACCTTGCACTTGACTCCTTGCCATTACCCAGNCCTGGNGCAGGA  
CGNGAGGACNCTNACCACACGGAACCGGGCTGGTGGACTGCTCC

FIG. 15XX



16519.1.edit

AGCGTGGTCGCGGACGANGTCCTGTGACAGTGGNACTGGTAGAAGTTCCANGAACCCCTGA  
ACTGTAAGGGTTCTTCATCAGTGCCAACAGGATGACATGAAATGATGTACTCAGAAGNGN  
CCTGGAATGGGGCCCATGANATGGTTGCC

16519.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCCACCACACCCAATTCCTTGCTGGTATCATGGCAGCCGC  
CACGTGCCAGGATTACCGGCTACATCAAGTATGAGAAGCCTGGGTCTCCTCCCAGAGA  
AGTGGTCCCTCGGCCCCGCCCTGGTGTCACAGAGGCTACTATTACTGGCCTGGAACCGGGA  
ACCGAATATACAATTTATGTCAATTGCCCTGAAGAATAATCAGAAGAGCGAGCCCCTGATTG  
GAAGGAAAAAGACAGACGAGCTTCCCCAACTGGTAACCCTTCCACACCCCAATCTTCATG  
GACCAGAGATCTTGGATGTTCTTCCACAGTTCAAAAGACCCCTTTCGGCACCCCCCTGG  
GTATGAACCTGGGAAAANGNANTTAANCTTTCCTGGCA

16520.1.edit

AGCGTGGTCGCGGCCGAGGTCTGGGATGCTCCTGCTGTACAGTGAGATATTACAGGATC  
ACTTACGGAGAAACAGGAGGAAATAGCCCTGTCCAGGAGTTCACTGTGCCTGGGAGCAAG  
TCTACAGCTACCATCAGCGGCCCTTAAACCTGGAGTTGATTATACCATCACTGTGTATGCTG  
TCACTGGCCGTGGAGACAGCCCCGCAAGCAGCAAGCCAATTTCCATTAATTACCGAACAG  
AAATTGACAAACCATCCAGATGCAAGTGACCGATGTTCAAGGACAACAGCATTAGTGTC  
AGTGGCTGCCTTCAAGGTNCCCTGGTACTGGGTACAGANTAACCACCACTCCCCAAAATG  
GACCAGGAACCAAAAACTTAAACTGCAGGGTCCAGATCAAAACAGAAATGACTATTGA  
ANGCTTGACGCCACAGTGGGAGTATNGGGTAGTGNCTATGCTTCAGAATCCAAGCGGA  
AAAANGTCAAGCCTTNTGGGTTCAA

16520.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTTGCAGCTCTGCAGTGTCTTCTTACCATCAGGTGCA  
GGGAATAGCTCATGGATTCCATCCTCAGGGCTCGAGTAGGTACCCTGTACCTGGAAACTT  
GCCCCGTGTTGGCTTTCCCAAGCAATTTTGATGGAATCGACATCCACATCAGTGAATGCCAG  
TCCTTTAGGGCGATCAATGTTGGTACTGCAGNCTGAACCAGAGGCTGACTCTCTCCGCTT  
GGATTCTGAGCATAGACACTAACCCATCTCACTGTGGGCTGCAANCCTTCAATAANNC  
ATTTCTGTTTGATCTGGACC

16521.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTGGTGGGGTCTGGCACACGCACATGGGGGNGTTGNT  
CTNATCCAGCTGCCCAGCCCCCATTTGGCGAGTTTGAGAAGGTGTGCAGCAATGACAACAA  
NACCTTCGACTCTTCTGCCACTTCTTTGCCACAAAGTGACCCCTGGAGGGCACCAAGAAG  
GGCCACAAGCTCCACCTGGAGTACATCGGGCCTTGCAAATACATCCCCCTTGCCTGGACT  
CTGAGCTGACCGAATTTCCCCCTTGCGCATGCGGGACTGGCTCAAGAACCGTCTGGCACCC  
TTGTATGANAGGGATGAAGACACNACC



16522.1.edit

AGCGTGGTCGCGGCCGAGGTCTGTCTACAGTCTCAGGACTCTACTCCCTCAGCAGCGTG  
GTGACCGTGCCCTCCAGCAACTTCGGCACCCAGACCTACACCTGCAACGTAGATCACAAGC  
CCAGCAACACCAAGGTGGACAAGAGAGTTGAGCCAAATCTTGTGACAAAACCTACACAT  
GCCCCACCGTGCCCAAGCCTGAACTCTGGGGGGACCGTCAGTCTTCTCTTCCCCCGCAT  
CCCCCTTCCAAACCTGCCCCGGGCGGCGCTCGAAAGCCGAATTCAGGACACTGGCGGCCG  
GTACTAGTGGANCCNAACCTTGGNANCCAACCTGGNGGAANTAATGGGCATAANCTGTTTC  
TGGGGGGAAAATTGGTATCCNGTTTACAATTCCNCACAACATACGAGCCGGAAGCATAAA  
AGNGTAAAAGCCTGGGGGNGGCCTANTGAAGTGAAGCTAAACTCACATTAATTNGCGTTG  
CCGCTCACTGGCCCCGCTTTTCCAGC

16522.2.edit

TCGAGCGGCCGCCCCGGGCAGGTTTGAAGGGGGATGCGGGGGAAGAGGAAGACTGACGG  
TCCCCCAGGAGTTCAGGTGCTGGGCACGGTGGGCATGTGTGAGTTTGTACAAAGATTTC  
GGCTCAACTCTCTTGTCCACCTTGGTGTGCTGGGCTTGATCTACGTTGCAGGTGTAGGT  
CTGGGNGCCGAAGTTGCTGGAGGGCACGGTCACACGCTGCTGAGGGAGTAGAGTCTGA  
GGAAGTGTANGACAGACCTCGGCCGNGACCACGCTAAGCCGAATTCTGCAGATATCCATCA  
CACTGGCGGCCGCTCCGAGCATGCATTTTAGAGG

16523.1.edit

AGCGTGGNCGCGGACGANGACAACAACCCC

16523.2.edit

TCGAGCGGCCGCCCCGGGCAGGNCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCG  
AACTGGAATCCATCGGTATGCTCTTGCCGAACCAGACATGCCTCTTGTCTTGGGGTCTT  
GCTGATGNACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGCAGGTCTACCA  
GTCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCC  
AGTACTCTCCACTCTTCCAGTCAGAGTGGCACATCTTGAGGTCACGGCAGGTGCGGGCGGG  
GTTCTTGACCT

16524.1.edit

AGCGTGGTCGCGGCCGAGGTCCAGCCTGGAGATAANGGTGAAGGTGGTGGCCCCGACTT  
CCAGGTATAGCTGGACCTCGTGGTAGCCCTGGTGAGAGAGGTGAACTGGCCCTCCAGGA  
CCTGCTGGTTTCCCTGGTGCTCCTGGACAGAATGGTGAACCTGGNGGTAAAGGAGAAAGA  
GGGGTCCGGNTGANAAGGTGAAGGAGGCCCTCTGNATTGGCAGGGGCCCCANGACTT  
AGAGGTGGAGCTGGCCCCCTGGCCCCGAAGGAGGAAAGGGTGGTGGTCTCTCTGGG  
CCACCTGG

FIG. 15ZZ



16524.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTGGGCCAGGAGGACCAATAGGACCAGTAGGACCCCTT  
GGGCCATCTTTCCCTGGGACACCATCAGCACCTGGACCGCCTGGTTCACCCTTGTACCCCTT  
TGGACCAGGACTTCCAAGACCTCTCTTTCTCCAGGCATTCTTGCAGACCAGGAGTACCA  
NCAGCACCAAGGTGGCCCAGGAGGACCAGCAGCACCCCTTTCTCCTTCGGGACCAGGGGGA  
CCAGCTCCACCTCTAAGTCCTGGGGCCCTGCCAATCCAGGAGGGCCTCTTCACTTCTC  
ACCCGGAGCCCCCTCTTCT

16526.1.edit

TCGAGCGGCCGCCCCGGGCAGGTCCACCGGGATATTGGGGGTCTGGCAGGAATGGGAGGC  
ATCCAGAACGAGAAGGAGACCATGCAAAGCCTGAACGACCGCCTGCCTCTTACCTGGAC  
AGAGTGAGGAGCCTGGAGACCGACAACCGGAGGCTGGAGAGCAAAATCCGGGAGCACTT  
GGAGAAGAAGGGACCCCAGGTCAGAGACTGGAGCCATTACTTCAAGATCATCGAGGACCT  
GAGGGCTCANATCTTCGAAATACTGCNGACAATGCCCG

16526.2.edit

ATGCGNGGTCGCGGCCGANGACCANCTCTGGCTCATACTTGACTCTAAAGNCNTACCAG  
NANTTACGGNCATTGCCAATCTGCAGAACGATGCGGGCATTGTCCGCANTATTTGCGAAG  
ATCTGAGCCCTCAGGNCCTCGATGATCTTGAAGTAANGGCTCCAGTCTCTGACCTGGGGT  
CCTTCTTCTCCAAGTGCTCCCGGATTTTGCTCTCCAGCCTCCGGTCTCGGTCTCCAAGNCT  
TCTCACTCTGTCCAGGAAAAGAGGCCAGGCGGNCGATCAGGGCTTTTGCATGGACT

16527.1.edit

AGCGTGCTCGCGGCCGAGGTTGTACAAGCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT  
TT

16527.2.edit

TCGAGCGGCCGCCCCGGGCAGGTCTGCCAACACCAAGATTGGCCCCCGCCGCATCCACACA  
GTTNGTGTGCGGGGAGGTAACAAGAAATACCGTGCCCTGAGGNTGGACGNGGGGAATTC  
TCCTGGGGCTCAGAGTGTGTACTCGTAAACAAGGATCATCGATGTTGTCTACAATGCAT  
CTAATAACGAGCTGGTTCGTACCAAGACCCTGGTGAAGAATTGCATCGTGCTCATNGACA  
GCACACCGTACCGACAGTGGGTACCGAAGTCCCACTATGCNCCT

**FIG. 15AAA**



16528.1.edit

TCGAGCGGCCGCCCGGGCAGGTCCACCACACCAATTCCTTGCTGGTATCATGGCAGCCGC  
CACGTGCCAGGATTACCGCTACATCATCAAGTATGAGAAGCCTGGGTCTCTCCAGAGA  
AGTGGTCCCTCGGCCCCGCCCTGGTGTACAGAGGCTACTATTACTGGCTGGAACGGGA  
ACCGAATATACAATTTATGTCATTGCCCTGAAG

16528.2.edit

AGCGTGNTCNCGGCCGAGGATGGGGAAGCTCGNCTGTCTTTTCTTCCAATCAGGGGCTN  
NNTCTTCTGATTATTCTTCAGGGCAANGACATAAATTGTATATTCGNTCCCGGTTCCAGN  
CCAGTAATAGTAGCCTCTGTGACACCAGGGCGGGGCCGAGGGACCACTTCTCTGGGAGGA  
GACCCAGGCTTCTCATACTTGATGATGAAGCCGTAATCCTGGCACGTGGGCGGCTGCCAT  
GATACCACCAANGAATTGGGTGTGGTGGACCTGCCCGGGCGGGCCGCTCGAAAAACCGAA  
TTCNTGCAAGAATATCCATCACACTTGGGCGGGCCGNTCGAACCATGCATCNTAAAAAGG  
CCCCAATTTCCCCCTATTAGNGAAGCCNCATTTAACAAATTCCACTTGG

16529.1.edit

TCGAGCGGCCGCCCGGGCAGGTCTCGCGGTCCGACTGGTGATGCTGGTCTGTTGGTCCCC  
CCGGCCCTCCTGGACCTCCTGGTCCCCCTGGTCTCCAGCGCTGGTTTCGACTTCAGCTTC  
CTGCCCCAGCCACCTCAAGAGAAGGCTCACGATGGTGGCCGCTACTACCGGGCTGATGAT  
GCCAATGTGGTTCTGTGACCGTGACCTCGAGGTGGACACCACCTCAAGAGCCTTGAGCCA  
GCAGAATCGAAAAACATTCGGAACCCAAGAAGGGCAAGCCCGCAAAGAAACCCCGCCCGC  
ACCTGGCCGNGAACCTCCAAGAANGTGCCACNTCTTGACTGGGAAAAAAAGGGAAAANT  
ACTTGAATTGGAC

16529.2.edit

AGCGTGGTCCGGGCCGAGGTCCACATCGGCAGGGTCCGAGCCCTGGCCGCCATACTCGAA  
CTGGAATCCATCGGTCATGCTCTCGCCGAACCAGACATGCCTCTTGTCCTTGGGGTCTTGC  
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACGAGGTCTCACCAGT  
CTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCCAG  
TACTCTCCACTCTCCAGTCAGAAGTGGCACATCTTGAGGTACGGCAGGGTGCGGGCGGG  
GTTCTTGCGGGCTGCCCTTCTGGGCTCCCGGAATGTTCTNNGAATTGCTGG

**FIG. 15BBB**



16530.1.edit

AGCGTGGTCGCGGCCGAGGTCCACTAGAGGTCTGTGTGCCATTGCCAGGCAGAGTCTCTG  
CGTTACAACTCCTAGGAGGGCTTGCTGTGCGGAGGGCCTGCTATGGTGTGCTGCGGTTCA  
TCATGGAGAGTGGGGCCAAAGGCTGCGAGGTTGTGGTGTCTGGGAACTCCGAGGACAGA  
GGGCTAAATCCATGAAGTTTGTGGATGGCCTGATGATCCACAGCGGAGACCTGTAACTA  
CTACGTTGACACTTGCTTGTGCGCCACGTGTGCTCANACANGGGTGGGCTGGGCATCAAG  
GNG

16530.2.edit

TCGAGCGGCCGCCCGGGCAGGTCTGCCAAGGAGACCCTGTTATGCTGTGGGGACTGGCTG  
GGGCATGGCAGGCGGCTCTGGCTTCCACCTTCTGTTCTGAGATGGGGGTGGTGGGCAGT  
ATCTCATCTTTGGGTTCCACAATGCTCACGTGGTCAGGCAGGGGCTTCTTAGGGCCAATCT  
TACCAGTTGGGTCCAGGGCAGCATGATCTTACCTTGATGCCAGCACACCTGTCTGAG  
CAACACGTGGCGCACAGCAAGTGTAACGTAAGTAAGTTAACAGGGTCTCCGCTGTGGAT  
CATCAGGCCATCCACAACTTCATGGATTAAACCCTCTGTCTCGGAG

16531.1.edit

TCGAGCGGCCGCCCGGGCAGGTGTTTCAGAGGTTCCAAGGTCCACTGTGGAGGTCCCAGG  
AGTGCTGGTGGTGGGCACAGAGGTCCGATGGGTGAAACCATGACATAGAGACTGTTCTCT  
GTCCAGGGTGTAGGGGCCAGCTCTTTGATGCCATTGGCCAGTTGGCTCAGCTCCCAGTAC  
AGCCGCTCTCTGTTGAGTCCAGGGCTTTTGGGGTCAAGATGATGGATGCAGATGGCATCCA  
CTCCAGTGGCTGCTCCATCCTTCTCGGACCTGAGAGAGGTGAGTCTGCAGCCAGAGTACAG  
AGGGCCAACACTGGTGTCTTTGAATA

16531.2.edit

AGCGTGGTCGCGGCCGAGGTCTGTACTGGGAGCTAAGCAAACCTGACCAATGACATTGAAG  
AGCTGGGCCCCTACACCCTGGACAGGAACAGTCTCTATGTCAATGGTTTCACCCATCAGAG  
CTCTGTGNCCACCACCAGCACTCCTGGGACCTCCACAGTGGATTTCAGAACCTCAGGGACT  
CCATCCTCCCTCTCCAGCCCCACAATTATGGCTGCTGGCCCTCTCCTGGTACCATTACCCCT  
CAACTTCACCATCACCAACCTGCAGTATGGGGAGGACATGGGTACCCCTGNCTCCAGGAA  
GTTCAACACCACA

16532.1.edit

TCGAGCGGCCGCCCGGACAGGTCTGGGCGGATAGCACCGGGCATATTTTGAATGGATGA  
GGTCTGGCACCCCTGAGCAGTCCAGCGAGGACTTGGTCTTAGTTGAGCAATTTGGCTAGGAG  
GATAGTATGCAGCACGNTCTGAGNCTGTGGGATAGCTGCCATGAAGTAACCTGAAGGAG  
GTGCTGGCTGGTANGGGTTGATTACAGGGTTGGGAACAGCTCGTACACTTGCCATTCTCTG  
CATATACTGGTTAGTGAGGTGAGCCTGGCCCTCTTCTTTTG



01\_16558.3.edit

AGCGTGGTCGCGGCCGAGGTGAGCCACAGGTGACCGGGGCTGAAGCTGGGGCTGCTGGNC  
CTGCTGGTCCTG

02\_16558.4.edit

CAGCNGCTCCNACGGGGCCTGNGGGACCAACAACACCGTTTTACCCCTTAGGCCCTTTGGC  
TCCTCTTTCTCTTTAGCACCAGGTTGACCAGCAGCNCCANCAGGACCAGCAAATCCATTG  
GGGCCAGCAGGACCGACCTCACCACGTTACCCAGGGCTTCCCCGAGGACCAGCAGGACCA  
GCAGGACCAGCAGCCCCAGCTTCGCCCCGGTCACCTGTGGCTCACCTCGGCCCGCAGCACG  
CT

03\_16535.1.edit

TCGAGCGGTGCGCCCGGCAGGTCCACCGGGATAGCCGGGGTCTGGCAGGAATGGGAGGC  
ATCCAGAACGAGAAGGAGACCATGCAAAGCCTGAACGACCGCCTGGCCTCTTACCTGGAC  
AGAGTGAGGAGCCTGGAGACCGANAACCGGAGGCTGGANAGCAAAATCCGGGAGCACTT  
GGAGAAGAAGGACCCCAGGTCAAGAGACTGGAGCCATTACTTCAAGATCATCGAGGGA  
CCTGGAGG

04\_16535.2.edit

AGCGNNGTTCGCGGCCGAGGTCCAGCTCTGTCTCATACTTGACTCTAAAGTCATCAGCAGCA  
AGACGGGCATTGTCAATCTGCAGAACGATGCGGGCATTGTCCGAGTATTTGCGAAGATCT  
GAGCCCTCAGGTCTCGATGATCTTGAAGTAATGGCTCCAGTCTCTGACCTGGGGTCCCTT  
CTTCTCCAAGTGCTCCCGGATTTTGCTCTCCAGCCTCCGGTCTCGGTCTCCAGGCTCCTCA  
CTCTGTCCAGGTAAGAAGGCCAGCGGTCGTTTCAGGCTTGCATGGTCTCCTTCTCGTTCT  
GGATGCCTCCCATTCCTGCCAGACCC

05\_16536.1.edit

TCGAGCGGCCGCCCCGGGCAGGTGAGGAAGCACATTGGTCTTAGAGCCACTGCCTCCTGGA  
TTCCACCTGTGCTGCGGACATCTCCAGGGAGTGCAGAAGGGAAGCAGGTCAAACCTGCTCA  
GATCAGTCAGACTGGCTGTTCTCAGTTCTCACCTGAGCAAGGTCAGTCTGCAGCCAGAGTA  
CAGAGGGCCAACACTGGTGTTCTTGAACAAGGGCTTGAGCAGACCCTGCAGAACCCTCTTC  
CGTGGTGTTGAACCTCCTGGAACCAGGGTGTTCATGTTTTCTCATAATGCAAGGTTG  
GTGATGG

**FIG. 15DDD**



07\_16537.1.edit

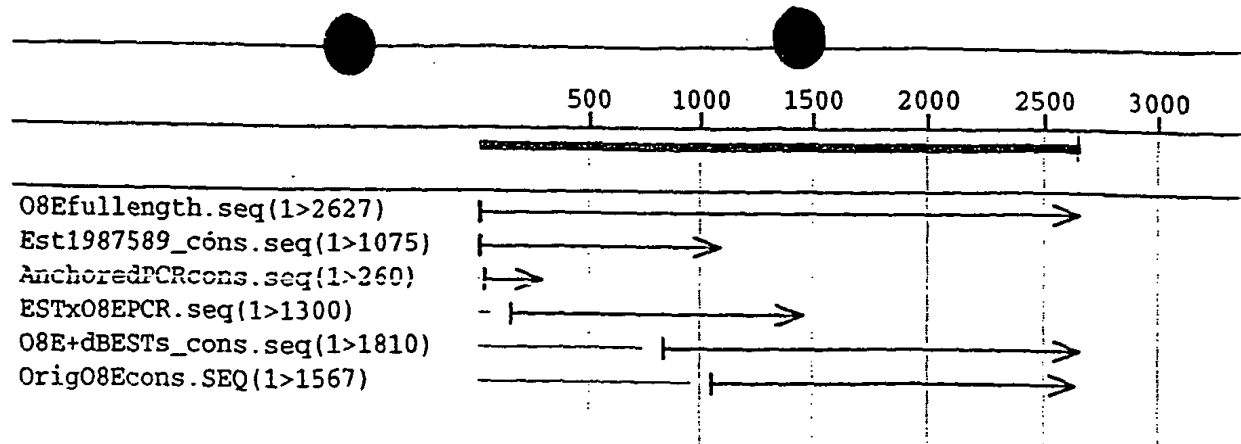
AGCGTGGTCGCGGCCGAGGTCCACATCGGCAGGGTCGGAGCCCTGGCCGCCATACTCGAA  
CTGGAATCCATCGGTCACTGCTCTCGCCGAACCAGACATGCCTCTTGTCTTGGGGTTCTTGC  
TGATGTACCAGTTCTTCTGGGCCACACTGGGCTGAGTGGGGTACACCGCAGGTCTCACCAG  
TCTCCATGTTGCAGAAGACTTTGATGGCATCCAGGTTGCAGCCTTGGTTGGGGTCAATCCA  
GTAATCTCCACTCTTCCAGTCAGAAGTGGGCACATCTTGAGGTCACCGGCAGGTGCCGGCC  
CGGGGGTTCTTGCGGCTTGCCTCTGGGCTCCGGATGTTCTCGATCTGCTTGGCTCAGGCTC  
TTGAGGGTGGGTGTCCACCTCGAGGTACGGTCACCGAAACCTGCCCGGGCGGCCCGCTC  
GA

08\_16537.2.edit

TCGAGCGGTGCGCCGGGCAGGTTTCGTGACCGTGACCTCGAGGTGGACACCACCCTCAAG  
AGCCTGAGCCAGCAGATCGAGAACATCCGGAGCCCAGAGGGCAGCCGCAAGAACCCCGC  
CCGCACCTGCCGTGACCTCAAGATGTGCCACTCTGACTGGAAGAGTGGAGAGTACTGGAT  
TGACCCCAACCAAGGCTGCAACCTGGATGCCATCAAAGTCTTCTGCAACATGGAGACTGGT  
GAGACCTGCGTGTACCCCACTCAGCCCAGTGTGGGCCAGAAAGAACTGGTACATCAGCA  
AGGAACCCCAAGGACAAGAGGCATTGCTTGGTTCGGCGAGNAGCATGACCCGATGGATT  
CCAGTTTCGAGTATTGGCGGCCAGGGCTTCCCGACCCTTGCCGATGTGGACCTCGGCCCGG  
ACCACCGCT

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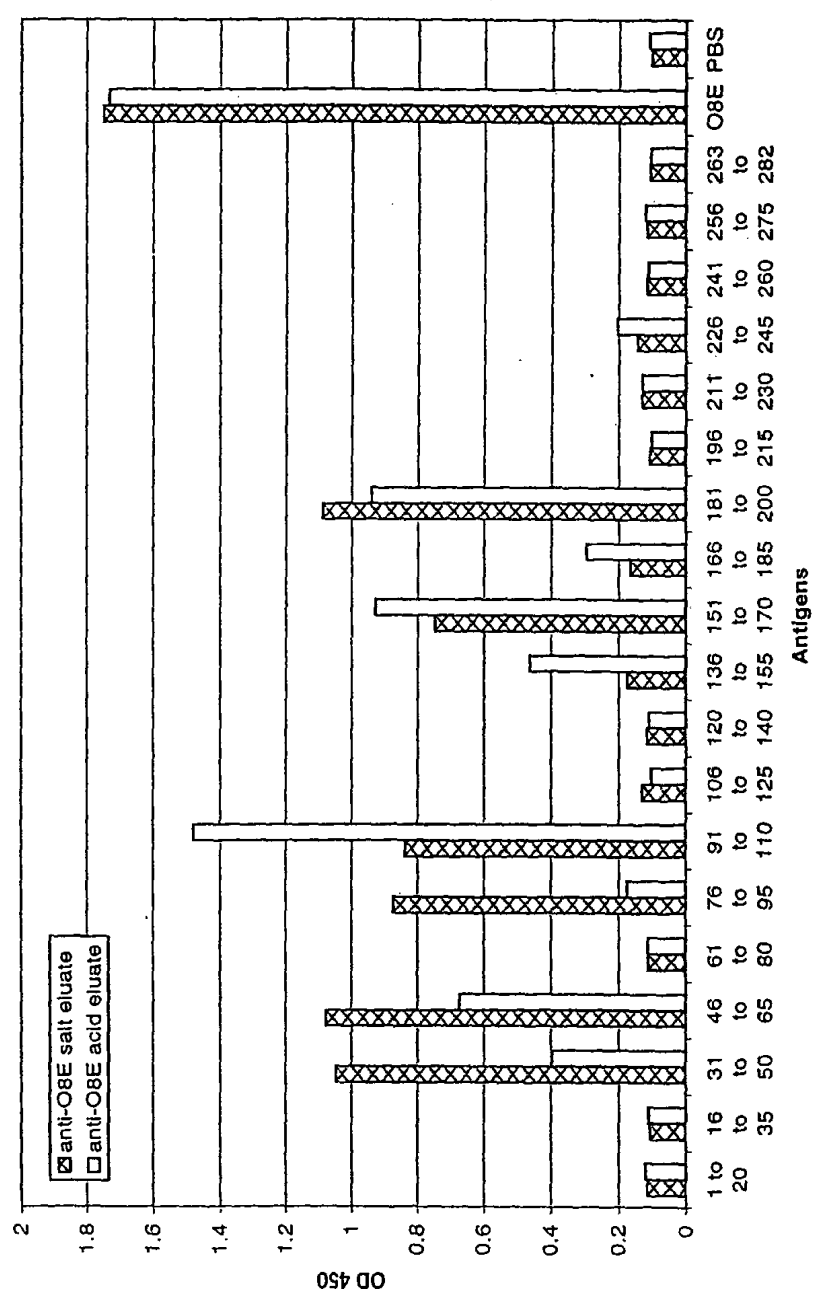
Fig. 1b

AB



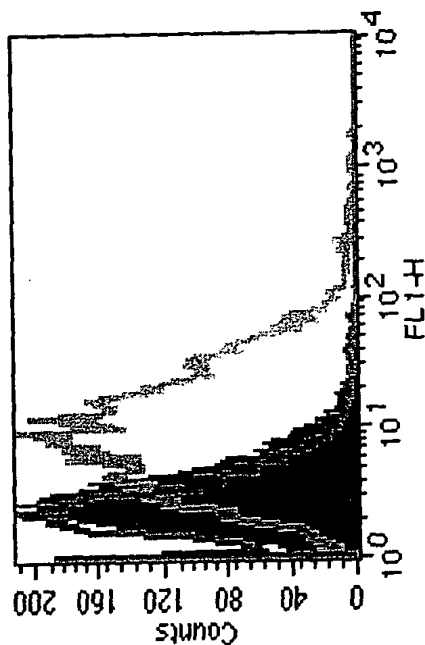
Fig. 17

O8E Epitope Mapping





# O8E Surface Expression



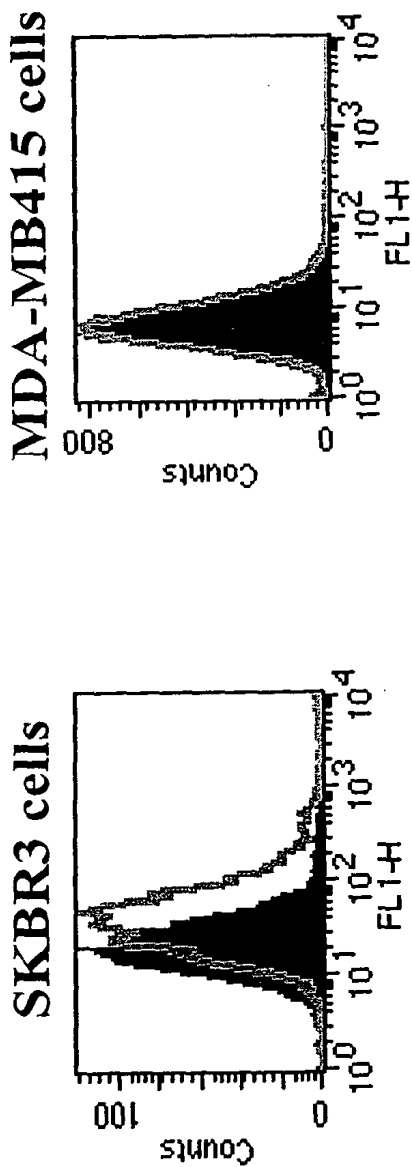
- B305D/HEK stained with anti -O8E antibody
- O8E/HEK stained with anti -O8E antibody
- O8E/HEK stained with an irrelevant antibody

Fig. 18



104040 1222860

# Surface expression of O8E



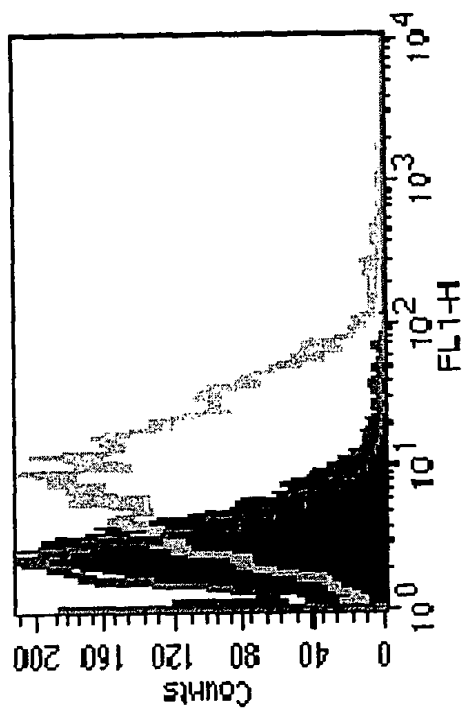
Blue; irrelevant antibody  
Green; anti-O8E antibody

Fig. 19



104040 122850

## O8E Surface Expression

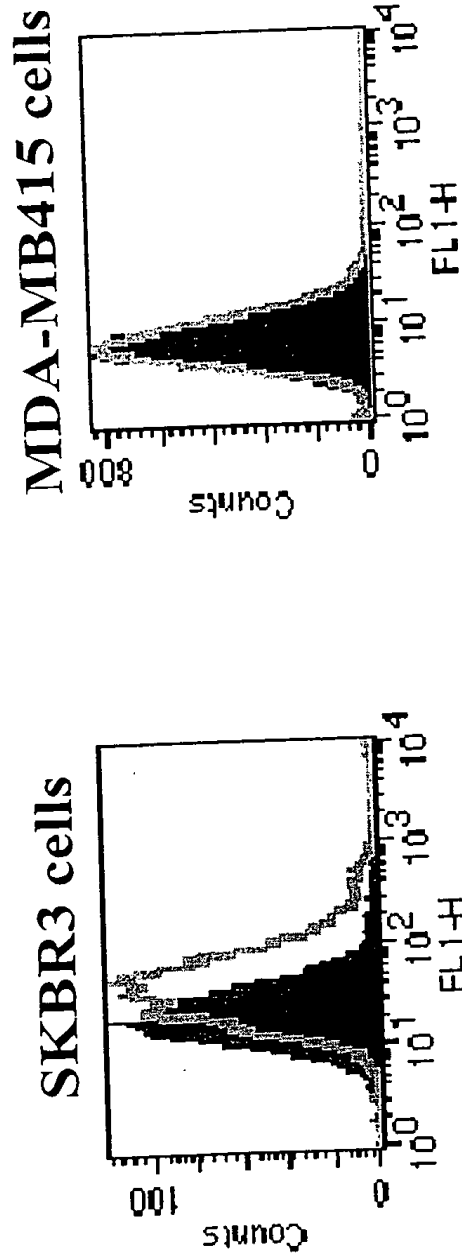


- B305D/HEK stained with anti -O8E antibody
- O8E/HEK stained with anti -O8E antibody
- O8E/HEK stained with an irrelevant antibody

FIGURE 20



# Surface expression of O8E



**Black:** Irrelevant antibody  
**Light Grey:** Anti-O8E antibody

**Figure 21**



# O8E expression in HEK293 Cells

( probed with anti-O8E rabbit polyclonal sera #2333L )

12243860

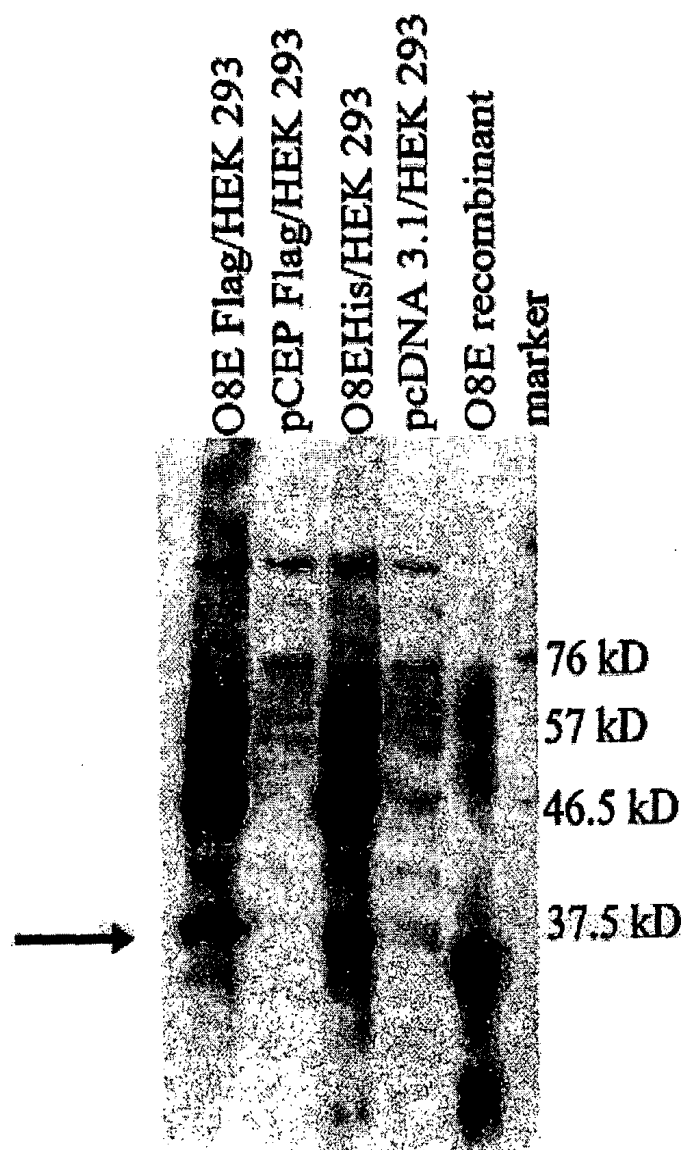


FIGURE 22



0

011000 012000 014000 016000 018000 020000 022000 024000 026000 028000 030000 032000 034000 036000 038000 040000 042000 044000 046000 048000 050000 052000 054000 056000 058000 060000 062000 064000 066000 068000 070000 072000 074000 076000 078000 080000 082000 084000 086000 088000 090000 092000 094000 096000 098000 100000 102000 104000 106000 108000 110000 112000 114000 116000 118000 120000 122000 124000 126000 128000 130000 132000 134000 136000 138000 140000 142000 144000 146000 148000 150000 152000 154000 156000 158000 160000 162000 164000 166000 168000 170000 172000 174000 176000 178000 180000 182000 184000 186000 188000 190000 192000 194000 196000 198000 200000 202000 204000 206000 208000 210000 212000 214000 216000 218000 220000 222000 224000 226000 228000 230000 232000 234000 236000 238000 240000 242000 244000 246000 248000 250000 252000 254000 256000 258000 260000 262000 264000 266000 268000 270000 272000 274000 276000 278000 280000 282000 284000 286000 288000 290000 292000 294000 296000 298000 300000 302000 304000 306000 308000 310000 312000 314000 316000 318000 320000 322000 324000 326000 328000 330000 332000 334000 336000 338000 340000 342000 344000 346000 348000 350000 352000 354000 356000 358000 360000 362000 364000 366000 368000 370000 372000 374000 376000 378000 380000 382000 384000 386000 388000 390000 392000 394000 396000 398000 400000 402000 404000 406000 408000 410000 412000 414000 416000 418000 420000 422000 424000 426000 428000 430000 432000 434000 436000 438000 440000 442000 444000 446000 448000 450000 452000 454000 456000 458000 460000 462000 464000 466000 468000 470000 472000 474000 476000 478000 480000 482000 484000 486000 488000 490000 492000 494000 496000 498000 500000 502000 504000 506000 508000 510000 512000 514000 516000 518000 520000 522000 524000 526000 528000 530000 532000 534000 536000 538000 540000 542000 544000 546000 548000 550000 552000 554000 556000 558000 560000 562000 564000 566000 568000 570000 572000 574000 576000 578000 580000 582000 584000 586000 588000 590000 592000 594000 596000 598000 600000 602000 604000 606000 608000 610000 612000 614000 616000 618000 620000 622000 624000 626000 628000 630000 632000 634000 636000 638000 640000 642000 644000 646000 648000 650000 652000 654000 656000 658000 660000 662000 664000 666000 668000 670000 672000 674000 676000 678000 680000 682000 684000 686000 688000 690000 692000 694000 696000 698000 700000 702000 704000 706000 708000 710000 712000 714000 716000 718000 720000 722000 724000 726000 728000 730000 732000 734000 736000 738000 740000 742000 744000 746000 748000 750000 752000 754000 756000 758000 760000 762000 764000 766000 768000 770000 772000 774000 776000 778000 780000 782000 784000 786000 788000 790000 792000 794000 796000 798000 800000 802000 804000 806000 808000 810000 812000 814000 816000 818000 820000 822000 824000 826000 828000 830000 832000 834000 836000 838000 840000 842000 844000 846000 848000 850000 852000 854000 856000 858000 860000 862000 864000 866000 868000 870000 872000 874000 876000 878000 880000 882000 884000 886000 888000 890000 892000 894000 896000 898000 900000 902000 904000 906000 908000 910000 912000 914000 916000 918000 920000 922000 924000 926000 928000 930000 932000 934000 936000 938000 940000 942000 944000 946000 948000 950000 952000 954000 956000 958000 960000 962000 964000 966000 968000 970000 972000 974000 976000 978000 980000 982000 984000 986000 988000 990000 992000 994000 996000 998000 1000000

O8E Rabbits 01212000

Date:1/21/99

Antigen on Plate	Sera Sample	Antibody Dilutions													
		1:1000	1:2000	1:4000	1:8000	1:16000	1:32000	1:64000	1:128000	1:256000	1:512000	1:1024000	1:2048000		
O8E (#632-24)	Prelimmune sera (#2576L): 1/1/10/99	0.13	0.09	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
		0.10	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.07
	Average	0.11	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.07
	α-O8E (#2576K): 1/1/2000	2.92	2.81	2.74	2.70	2.58	2.08	1.61	1.01	0.68	0.40	0.24	0.15		
		2.93	2.77	2.74	2.69	2.48	2.08	1.57	1.00	0.66	0.40	0.23	0.16		
	Average	2.93	2.79	2.74	2.69	2.53	2.08	1.59	1.00	0.67	0.40	0.23	0.16		
	Prelimmune sera (#2333L): 1/1/10/99	0.09	0.07	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
		0.08	0.07	0.08	0.07	0.10	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	Average	0.08	0.07	0.06	0.06	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	α-O8E (#2333L): 1/1/2000	2.73	2.75	2.64	2.48	2.30	1.78	1.41	0.92	0.58	0.32	0.20	0.14		
		2.73	2.76	2.51	2.60	2.37	1.93	1.44	0.88	0.58	0.35	0.20	0.14		
	Average	2.73	2.76	2.57	2.54	2.33	1.85	1.43	0.90	0.58	0.33	0.20	0.14		

FIGURE 23



affil-pure OBE #2576L 739.87A&amp;B

Date: 5/2/2000	
Antibody Name	O8E polyclonal
Rabbit #, Bleed Date	2576L, 1/11/2000
Purification Method	affinity
Buffer	PBS
Notebook	#705, p150
lot #	739.87A
Antibody Concentration	1.4mg/ml
Initial Amount	18mg
	739.87B
	1.7mg/ml
	3mg

Antigen on Plate	Sera Sample	Antibody Dilutions											
		1:1000	1:2000	1:4000	1:8000	1:16000	1:32000	1:64000	1:128000	1:256000	1:512000	1:1024000	1:2048000
ORE #632-24	preimmune sera (2576L)	0.15	0.11	0.09	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.08
	Average	0.14	0.10	0.09	0.08	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.08
	$\alpha$ -ORE (2576L): 2/5/2000	2.74	2.71	2.63	2.49	2.29	1.87	1.39	0.92	0.57	0.33	0.20	0.14
		2.72	2.68	2.64	2.47	2.26	1.93	1.42	0.94	0.57	0.34	0.21	0.14
	Average	2.73	2.70	2.63	2.48	2.27	1.90	1.41	0.93	0.57	0.34	0.21	0.14
	affinity pure $\alpha$ -ORE poly salt peak 739-87A	2.69	2.60	2.50	2.21	1.83	1.34	0.99	0.64	0.38	0.22	0.15	0.11
		2.59	2.48	2.38	2.21	1.82	1.33	1.00	0.62	0.37	0.22	0.14	0.11
	Average	2.64	2.54	2.44	2.21	1.83	1.34	1.00	0.63	0.37	0.22	0.15	0.11
	affinity pure $\alpha$ -ORE poly acid peak 739-87B	2.46	2.39	2.40	2.34	2.08	1.73	1.29	0.81	0.49	0.29	0.18	0.13
		2.65	2.66	2.61	2.45	2.14	1.78	1.30	0.82	0.48	0.29	0.19	0.13
	Average	2.56	2.53	2.51	2.39	2.11	1.74	1.30	0.81	0.49	0.29	0.19	0.13

100.

FIGURE 24



# Anti-O8E mAb Binding to O8E Amino Acids 61-80 Induces Ligand Internalization

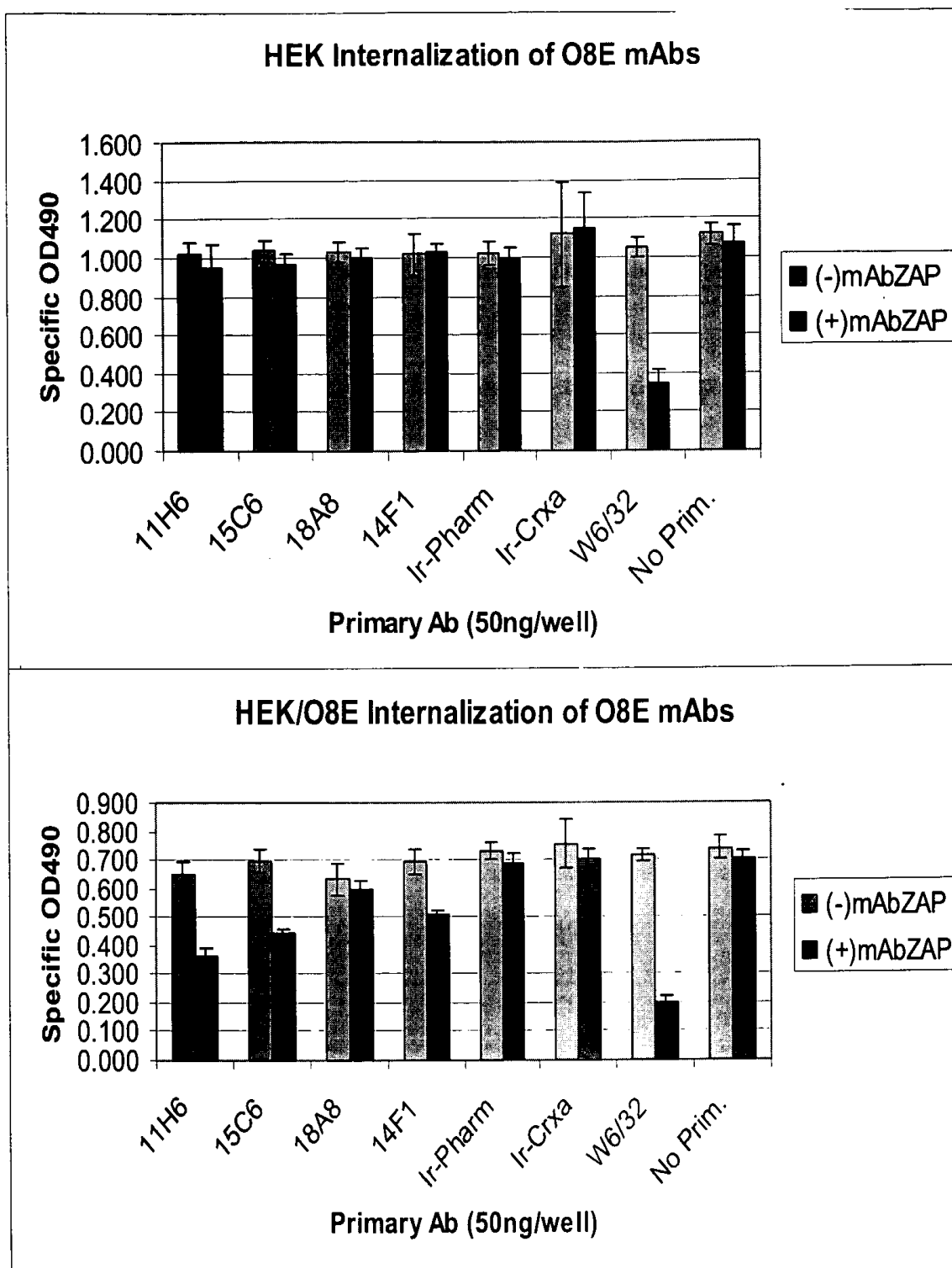


Figure 25